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Needed Research in the Field of Corrective Therapy

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Corrective therapy is a relatively new field. When compared to surgery or internal medicine, modern physical medicine is also a new field. Both of these areas, which are closely inter-related, need much research, for, like all new fields of science, there is far too much that is *not* known that we *need* to know for increasingly successful practice of the profession.

In the field of physical medicine, probably more is known about physical therapy than is known about corrective therapy, primarily because of the fact that physical therapy has been used and studied for a much longer period of time. To balance this fact, however, we need to keep in mind the fact that a great deal is known about physical education, but relatively little is known as yet about the application of physical education to pathological processes. It therefore behoves the corrective therapist to assume the initiative and to begin delving for the needed information.

Until about twenty-five years ago, very little research had been done in the area of physical education. Since 1928, when the Research Section of the American Physical Education Association was formed, more research has been done in physical education than was done in the thousand years before that (this is not true of the area of physiology of exercise, which is related to physical education). As far as accurate objective knowledge of physical education is concerned, however, we are probably just about five to ten percent along the road to where we should be five hundred years from now. In the writer's opinion, the field of physical medicine has reached about that same place. Progress in both areas can and should be rapid.

How much research in corrective therapy should be done by the corrective therapists themselves? Some of it should be done with the physiatrist. Some should be done by or with the cooperation of the physiologist, the bacteriologist, the pathologist, and the internist or surgeon.

Exercise is the major tool in corrective therapy. Without minimizing our present knowledge of exercise and its physiology, we think it is clear that we need to know much more about exercise and its

effect in the treatment of patients and in the reconditioning of convalescents.

Without further introduction, we shall proceed to suggest a number of topics which seem to the writer to need investigation.

Topics Concerning Dosage and Progression of the Exercise Program

1. Investigations of the dosages in foot pounds per unit of time of individual exercises as related to the body weight of the individual. At the present time we are working with prescriptions of exercise without knowing the real potency of each exercise. This is analogous to a physician prescribing drugs by the pinch or by the handful rather than prescribing them accurately in grams or cubic centimeters. The study of exercise dosage is best done in most cases by the use of oxygen consumption method, and this method will be feasible in hospitals or laboratories which have the equipment for this method of study. Some studies may be done with advantage by the pulse-ratio method.¹ Here the student of dosage needs to utilize experimental subjects with normal hearts. He calibrates various exercises against known dosages of such exercises as stool stepping, where the dosage can be accurately determined. Methods of conducting such studies will be found in the references cited.

In this connection, it would seem that separate studies should be made on exercises done in the reclining position where the individual doing the exercises does not have to hold his weight or raise his weight: he raises only the weight of the limb or a part of the body. Other studies should be made of exercises done while standing or while moving about. Studies in this field of dosage should also be directed toward aquatic exercises and work therapy jobs. In the matter of the aquatic exercise, the oxygen consumption method must be used as the stimulus of

¹C. H. McCLOY, *Tests and Measurements in Health and Physical Education*. New York. Appleton-Century-Crofts. Second Edition, 1942. pp. 242-244.

When using the pulse-ratio method of establishing the dosage of an exercise, the exercise studied is done at the usual cadence for exactly one minute, and the pulse-ratio (sitting) is taken. This is then compared to the *interpolated* pulse-ratio of the step-test pulse-ratio (administered as in the reference above) and the equivalent number of steps per minute is determined. The method will not be useful for exercise of great severity.

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the water of the swimming pool on the skin will modify the pulse-ratio too much.

2. Studies should be made of the effects of the dosage of small, weak muscle groups as over against larger stronger muscle groups, especially when these muscle groups are exercised to near capacity. To illustrate this, suppose an exercise like chinning on the horizontal bar is compared to full knee squats. An individual who can do fifteen pull-ups or "chins," frequently finds himself more exhausted when he does the whole fifteen, fighting hard to achieve the last two or three, than he does in doing fifty or sixty full squats. Here, in the latter exercise, he is doing many more foot pounds of work (with larger and stronger muscles), but the exercise involving fewer foot pounds exhausts him more. The indication is that we should study both types of exercise for dosage and for effect on the physical economy generally.

3. Studies need to be made on the effect of different amounts of work in different periods of time. For example, an exercise requiring 8,000 foot pounds of work, lifting a 75-pound barbell over a period of ten minutes has a completely different effect than if the same amount of work was done in five minutes and a still different effect if done in two minutes. It is a rather well known physiological fact that the developmental effect of exercise is more related to the *intensity* of the exercise than to its *amount*. This is probably true of cardiac muscle as well as of skeletal muscle. For example, an individual who wanted to be able to run the half mile in two minutes would probably not do more than ten or fifteen minutes of active exercise a day. He might jog about three minutes to warm up, do about a minute's short starts and dashes, after a bit of rest, run a half mile in two minutes and fifteen seconds, and after a bit more rest, run for another three or four minutes. This would be his day's workout. He would achieve more in the line of physical conditioning and preparation for faster running by sticking to such a program than he would by walking ten miles every day at three miles per hour. In the latter case, the amount of *work* would be greater, but it would be spread over too much time to have a great deal of effect in stimulating his muscles to the development of more strength and endurance. The conditioning effect of different intensities of dosage, then, needs to be investigated.

4. Investigations need to be conducted as to the best procedures for conducting heavy resistance exercises. At the present time, considerable attention has been given by corrective therapists and orthopedists to the proposals made by Dr. De Lorme.² Here the patient starts with a relatively light exercise,

and works up to a heavier exercise. It may well be that in the use of this very light exercise, not all of the motor units of the muscles are exercised. Even with the exercise of intermediate resistance, it may well be that not all of the motor units of the muscle are exercised, and not all will be exercised until towards the conclusion of the heaviest exercise. On the other hand, if the individual were to start with the heaviest exercise—after a warm up—he would use all of his motor units and he would then, because of fatigue, probably use all of them as he went down the scale of weight lifted. Experiments that have been done on this by Henry³ and Faulkner⁴ have indicated that there are significant differences between the degree of development by modifications of this latter method and by the De Lorme method. The indications are not completely clear at the present time, however, and a considerably larger amount of study needs to be given to this method of work. Henry and Faulkner found increases of from 50 percent to 100 percent in the strength of the individual functioning muscle groups on the *normal young athlete* in a period of eight weeks of persistent exercise.

5. In relationship to this heavy resistance exercise, the relative effects of different kinds of resistance exercises need to be studied. What would be the different effects, for example, of the resistance achieved by weights such as dumbbells and barbells, by springs, by manual resistance of the corrective therapist, and by self resistance of the individual, either by resisting one hand with the other or one leg with the other, or by resisting one group of muscles with their antagonists when using tension exercises? There are large differences in the effects here of the pulls on the muscle. We know relatively little about the effect on the development of the muscle itself.

6. More studies need to be conducted in the field of tolerance in different conditions. For example, what would be the exercise tolerance of an individual who has been ill with pneumonia for a couple of weeks as contrasted with the same individual three weeks later? The tolerance of every class of patients from the bed patient to the late convalescent, ready-to-go-back-to-work-next-week patient needs to be studied. Here, again, the effect of exercise taken

²T. L. DeLORME, "Techniques of Progressive Resistance Exercise," *Archives of Physical Medicine*, XXIX (May, 1948), pp. 263-273.

³CLAYTON G. HENRY, *A Comparison of the Effectiveness of Two Methods of Exercise for the Development of Muscular Strength*. Unpublished Master's Thesis, State University of Iowa, 1949.

⁴EVERETT W. FAULKNER, *A Comparison of the Effectiveness of Two Methods of Exercise for the Development of Muscular Strength*. Unpublished Master's Thesis, State University of Iowa, 1950.

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while reclining where a greater amount of local exercise in foot pounds may be done with a smaller degree of general fatigue (because of not having to hold up the body) may well give results beyond what could be achieved if the individual did his work standing up. The tolerance of patients just out of surgery, of those who have recently recovered from exhausting bouts with a disease, etc., needs investigation. The tolerance of such patients to short time, intensive exercises as over against longer continued, gentler exercises needs to be investigated.

7. There are numbers of modifications of methods of administering exercise that need investigation. For example, individuals doing such heavy resistance exercises as lifting barbells will achieve conditions as to blood pressure, etc., if the weight is lifted with the back straight and the glottis open and the patient breathing freely, as opposed to weights lifted with the glottis closed and the patient straining with his expiratory muscles. In the latter situation, systolic pressures will often rise to the neighborhood of 280 to 300. With the glottis open, they frequently rise only 30 or 40 millimeters. Differences of intrathoracic and intra-abdominal pressures will be significant in these two conditions. It may be that in order to "pop" closed aveoli in the sedentary patient, it may be desirable to occasionally make expiratory movements with the closed glottis.

Along these lines, we should investigate also the relationship of the high chest to pressure in the abdomen. Sir Arthur Keith,⁵ a number of years ago, investigated the intra-rectal pressures achieved under different conditions of high-chested and slumped-chested postures. In some cases, the pressures tripled when the posture was poor. This might be of real significance in the administration of exercises to surgical patients. With the high chest, where the diaphragm is high and the liver is pulled up, the fifteen-pounds-per-square-inch pressure of the air on the outside of the abdomen may very well counteract any tendencies toward wound rupture. Again, we need more information.

8. How frequently should exercises be administered to patients? Frequently it is administered twice daily. Would one fairly intensive and one light period of exercise per day do as well? Would a once-a-day administration do just as well? How about every other day? What differences in the respect should characterize the best combination of exercise

⁵SIR ARTHUR KEITH, "Man's Posture: Its Evolution and Disorders." *British Medical Journal*, 1923, Vol. I, April 7, 1923, p. 588.

"The Nature and Anatomy of Enteroptosis (Glenard's Disease)." *The Lancet*, March 7, 1903, I:631-640.

administrations for bed patients, for ambulatory patients, and for convalescents? It is not at all certain that these would be the same.

9. During the war it was ascertained in some studies in Germany and later repeated in the United States⁶ that individuals could be kept awake and alert by spraying the abdomen with water varying from warm to quite cool. Further experiments were made along these lines putting ice bags on the abdomen.⁷ Modifications of this type of practice might result in more conditioning exercise being tolerated by patients who have been ill than could be tolerated without it. Reading of the studies indicated, plus cautious experimentation, might indicate possibilities of great value here.

10. Are there any possibilities of the combination of exercise therapy and endocrine or vitamin therapy? Goldzieher⁸ indicates that moderate exercise stimulates the output of the cortex of the adrenals, making the individual feel better. He has indicated, however, that exhausting exercise tends to depress this output. What would be the effect of exercise in the energyless patient if accompanied by the administration of cortin or hormones of other kinds? We have some evidence that the administration of the proper vitamin combination may be of value as well.

11. What are the specific differences in effects between exercises taken in water and those taken on land? In the water, the patient's weight is held up by his buoyancy, and the exercise done is primarily done by the local muscle groups concerned working against the rather mild resistance of the water.

12. More studies need to be done in the area of the organization of work therapy. Frequently work therapy is prescribed with the very vaguest notions of its dosage, and a great deal of it is done only (a) to have an effect upon a local part, much in the same way as occupational therapy is used, or (b) to get some work done around the hospital that needs to be done, hoping, in a general way, that it will benefit the patient! We need to know much more about that type of exercise.

13. Studies need to be made of the relative value of exercise individually conducted and conducted with groups. There are physiatrists who believe that

⁶ARTHUR H. STEINHAUS, ALBERT KELSO and VICTOR REINHARDT, "Improvement of Visual and other Functions by Cold Hip Baths." *War Medicine*, IV:610-617. December, 1943.

⁷WM. P. HARR, JR., W. W. TUTTLE, and MARJORIE WILSON, "The Physiologic Effects of Abdominal Cold Packs." *Research Quarterly*, XX:153-169. May, 1949.

⁸MAX A. GOLDZIEHER. Personal communication.

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all exercise to patients should be administered individually, and that when administered to a group of patients together, it is "not medicine." By this same reasoning, group psychotherapy would be "not medicine." There is a vast amount of experience of physical educators to the effect that exercise given to a class of people who are homogeneously grouped is of more interest and is engaged in more earnestly than when done individually. It also saves the time of the busy corrective therapist to a very large extent. More study is needed along these lines.

14. What about the effect of exercise on certain muscles? This may be illustrated by considering the exercise of the psoas major. It has long been held by some theorists in the field of corrective physical education that leg raising while lying on the back tends to increase the lumbar curve *because of the pull of the psoas major* on the front of the lumbar spine. The writer is convinced that this is not true. The psoas, by its mechanical arrangement of levers, would flex the lumbar curve *forward*, not backward. What does increase the lumbar curve in this exercise is the pull of the weight of the limb through the sartorius and the rectus femoris on the front of the pelvis and which rotates the pelvis clockwise around a transverse axis. We need to know more about the effect of exercises of certain debatable muscles of this type, and research along these lines can well be instituted.

15. Studies need to be made on the best combinations of home exercises for the use of patients who are about to be discharged from the hospital. This should not be a shotgun prescription for all patients, but should consist of different types of prescriptions worked out for different types of patients in different conditions.

16. How fast may the conditioning program profitably progress? How fast can one progress in exercising bed patients who have been ill for several weeks? How fast can one progress with convalescents almost ready to go home? What about the effect of age on progression? What about the effect of general weakness, as in extremely sedentary people, as over against those who have always been relatively athletic? These questions we attempt to answer now out of intuition rather than wisdom, and these questions would stand a great deal of research.

17. Quite a bit of research needs to be done along the lines of recreational therapy as corrective exercise. First, one needs to know more about specific recreational activities for definite treatment of individual parts of the body—and the dosages indicated. Secondly, more needs to be known about the general dosage of recreational exercise for the increasing

of the general exercise load for motivation and for encouragement to participation. Frequently, however, patients may be caused to overdo by having recreational activities prescribed where the dosage is too great for the condition of the patient. Indications and contra-indications for recreation therapy as such should be better known than is at present the case.

Research Concerning the Remedial Exercise Program

1. What are the best exercises for each muscle? We need, first, to know muscle actions better than is currently the case. This study should be related to the axes of movement and to the moment levers of rotation of the muscles themselves.

2. What are the *best remedial exercises*, in the best order of progression, for each disability? For example, what is the best order of procedure following chest surgery? Here, the writer would like to use an analogy. In most hospitals, a medical formulary is available. Years ago, when the writer was studying medicine at Johns Hopkins Medical College, lues in the clinic were usually treated with a medicine which was called "house specific," usually abbreviated as "H.S." This was a combination, as we recall it, of mercury bichloride and potassium iodine. The writer does not recall the dosages used. However, one teaspoonful three times a day was the normal dose for an adult of one hundred and fifty pounds of weight. The dispensary, at that time, had considerable confidence in this medicine, and it was usually prescribed simply as "H.S., 1 dram, t.i.d." One did not need to remember exactly what the prescription was and in what proportions the two drugs were prescribed. Physicians use formulary prescriptions of this kind very widely. It seems to the writer that we need to develop an excellent "formulary of remedial exercises" for each disability. These should be so worked out in consultation with the physiatrists, surgeons, orthopedists, etc., to the point where both the surgeon and corrective therapist have confidence in each such series of exercises being indicated, proper, and well-selected. The surgeon can then prescribe with confidence the first couple of exercises at the proper time in the convalescence of the patient. They can be administered properly by the corrective therapist. Such research needs to be a continuing one, as such a formulary is in constant need of revision as more work is done and more ingenuity suggests better exercises.

3. What are the best modifications of exercises for the cripple, for amputees, for paraplegics, etc.? How best teach the skills needed by these people? What is the relationship of the skills needed to specific strengths of other muscle groups? A great deal

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of work has been done along these lines, but like other medical research, much more can probably be done with profit.

4. What are the best exercises for the strengthening of feet of patients who have been off their feet for a relatively long time?

5. What should be known about when *group* remedial exercises may be given as contrasted to individually conducted remedial exercise? A great deal of group therapy along these lines was conducted in the army during the war, and the results were excellent.

Research in Posture Training

This can usually be best conducted in cooperation with the orthopedic surgeon.

1. More work needs to be done along lines of the best poise and balance for good posture, both lateral and antero-posterior, and the best exercises and other educational procedures for achieving it.

2. As indicated above, more research is indicated as to the results of high chest versus low chest posture, particularly in relationship to abdominal or chest surgery, and to spinal and pelvic maladjustments. More study needs to be done concerning the relationship of postural disorders to low back pains and to strains of various kinds.

Research in the Relationship of Exercise to Age

As has been indicated in another publication,⁹ more and more work needs to be done in corrective therapy with the middle and old aged groups.

1. What are the effects of age on the exercise program? What medical findings are indicated before a patient can be "cleared" for a progressive exercise program? (a) For those who are very much out of good physical condition, and (b) for those who have kept in fairly good physical condition up to the present time.

2. What modifications are needed in exercise programs for the aging, both generally and in relation to special pathological conditions, both specific and those primarily associated with the aging process?

3. What additional modifications need to be made for the weaker, older people in contrast to the relatively stronger, older people?

4. What modifications need to be made in relationship to the exercise programs for acute disabilities as contrasted with those for the old chronic disability?

Research Concerning the Effects of Prolonged

Bed Rest on Conditions Relating to Exercise

1. What are the effects of prolonged bed rest on

⁹C. H. McCLOY, "Corrective Therapy for the Normal Person," *Journal of Physical and Mental Rehabilitation*, Vol. 4, No. 3, June and July, 1950.

the bones? It has long been thought—and this is supported by some research—that such long, continued bed rest tends to result in a greater degree of porosity of the bones. In a recent communication from Dr. C. L. Lowman of Los Angeles,¹⁰ the writer was told that in one case in an older patient who had been bed-ridden for a considerable time, the epiphysis of the greater trochanter of one femur had been knocked off when the patient was rolled over when exercised. What are the pertinent facts with regard to the bones?

2. What are the effects of prolonged bed rest upon the functioning of the sympathetic nervous system? We are all familiar with the fact that the bed patient who has been in bed for some time becomes dizzy and faint when arising from bed. How much could that be prevented by the use of cold sprays or cold packs on the abdomen or by exercise in bed?

3. To what extent can regular exercise during such bed rest prevent the formation of emboli? There might be considerable usefulness to the type of research which would investigate whether or not it was wise to do *some* exercise, no matter how gentle, even during fever in order to raise venous pressures sufficiently to break away small clots before they become large enough to be dangerous.

Research in Relation to Surgical Disabilities

There is a great need for the study of the physiology of exercise in relation to surgery and medicine. One of the outstanding textbooks on surgical physiology does not even have the word "exercise" in the index! This casts no reflection on the usefulness of this text for surgeons, but it does indicate the need for further study along these lines. Surgeons and corrective therapists are doing or not doing many, of the possible activities simply because of tradition, conservatism, and *lack of available knowledge* of physiological effects of exercise on a patient. Hence, numbers of types of research in this area seem to be indicated.

1. What *specific* exercise programs are indicated for *each type* of operation? What should be the best order of presentation of these exercises? What should be the indicated range of dosage? Again, these questions should be investigated in relation to supine versus standing exercises. Contra-indications and what-not-to-do for each injury are as important as are the indications.

2. What are the best exercises for the development of *each affected muscle* following surgery? For example, we need to know the best exercises for the

¹⁰DR. C. L. LOWMAN. Personal Communication.

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development of the pectoralis minor and subscapularis following a shoulder operation, or for the serratus anterior or the latissimus dorsi following a chest operation.

3. What are the effects of exercise on the wound itself? When is beginning exercise indicated and what should be the limitations as to dosage?

4. What would be the effect of the high chest position in modifying indications for exercise or in relaxing contra-indications as contrasted with exercises given without this precaution?

5. What are the effects of exercise on surgery of the intestine, such as intestinal anastomoses, etc.? It should be kept in mind that the viscera, abdominal and pelvic, resemble, in a way, a pool of fluid. These organs are about 90 percent water, and just as an egg in a mason jar shaken briskly will break, but an egg in a mason jar full of water can be shaken as hard as one can shake it without injury to the egg, so it is highly probable that the effect of exercise on a properly sutured viscous may be quite different from what might ordinarily be thought to be the case. Experiments on animals would be in order.

6. What about exercise relative to fever? Again, the question of the prevention of emboli might indicate some light exercise, enough to raise the venous pressure temporarily, even though the patient has a fever. Only adequate research will determine what the best procedure should be.

Researches in Relation to Exercise of Medical Patients

Part of these questions will overlap those for surgery, for some conditions are common to both fields; others will be considerably different.

1. Again comes the question of exercise during the time of fever. During the war, some patients were exercised by mistake while having a fever as high as 103—with apparent benefit to the patient! This, it should be understood, is not advocated by the present author! There is a possibility that fevers due to different organisms may have different indications. For example, the writer would feel that any patient suffering from a hemolytic streptococcus infection should certainly not be exercised. But are there other organisms which do not disseminate readily throughout the system, where exercise would be indicated under those circumstances? Only studies by bacteriologists, pathologists and internists will probably settle such questions.

2. Under what conditions will exercise exacerbate a medical disability and when will it benefit it?

3. The author would like to raise again the question of exercise for the tuberculous. Recognizing that common operating procedure is to forbid all

exercise at certain stages of tuberculosis, one might also take into account that the Germans¹¹ have, in some cases, found desirable results from certain types of exercise programs. The question should at least be investigated.

4. What about exercise in relation to various types of heart disabilities? How soon after rheumatic fever should exercise programs be instituted? (a) Should exercise for the cardiac patient be of the relatively intense type over a very brief interval of time, followed by prolonged rest, or should there be a much lesser intensity of dosage carried on over a longer period of time? (b) What are the best types of exercise for the cardiac patient with the various types of heart disabilities? (c) What should be the duration of rest after each stage of cardiac exercise? (d) What relationship to cardiac exercise would breathing exercises and the relaxation of other muscles than those used have on the exercise effects on the heart?

5. What would be the effects of different kinds of exercise on systolic pressure and diastolic pressure and pulse rate? Let us illustrate in the following manner. Suppose one were to exercise one limb at a time, followed by considerable rest. To what extent would the systolic and diastolic pressure and pulse rate be raised? Questions like this may be of consequence in exercising a patient with a duodenal ulcer where the physician hesitates to stir things up—and yet wants to prevent embolism and to prevent the deconditioning of the patient. We might have alternating short exercise bouts of one small part of the body at a time followed by rest, with an effect something like the effect of the diastoli following systoli on the rest of the heart.

6. How much exercise of various kinds does it take to influence the pulse rate and blood pressure rise in patients of different conditions? For example, it may take very much less exercise to raise the pulse rate and blood pressure in a weak, out of condition patient than it would in one in better condition.

7. Eventually, what exercise program should be prescribed for each disease in each of a number of indicated categories? This, of course, assumes careful medical care to see that exceptional conditions do not modify the picture. When is exercise completely contra-indicated?

8. What is the physiology of the effects of exercise in each disease condition? For example, in some conditions of nephritis, the tufts in the glomeruli

¹¹OTTO WIESE, "Tuberculosis and Gymnastics, Results and Summaries," *Zentralblatt für die Gesamte Tuberkuloseforschung*, XXVII, Num. 9/10, pp. 617-800. (In German.)

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are bloodless. What would be the effects of exercise of varying types on such conditions?

9. What are the functional effects of exercise on each organ when well, and when diseased?

10. What would be the effects of breathing exercises in connection with various diseases? For example, what would be the effect of breathing exercises on the alvioli and bronchi during or following pneumonias? What would be the effect of breathing exercises immediately following surgery? Leithauer¹² has indicated real values of such exercises.

Research Concerning the Neuro-Psychiatric Patient

Corrective therapy is doing a very good job in this area, but the writer feels sure that, just as psychiatry continues to make improvements in its treatment and will undoubtedly make further great strides in the future, so corrective therapy will do the same. Psychiatric treatment has been studied for many more years than has corrective therapy for the psychoneurotic. It would seem to the writer, therefore, that there is more chance that corrective therapy for the psychoneurotic will be improved than that psychiatric treatment will be improved. A few suggestions follow. If the individual is diseased physically, of course, the same conditions would apply as would apply to the non-psycho-neurotic patient who is diseased.

1. To do research here, the corrective therapist needs to have not only a considerable psychiatric background, but a good background in clinical psychology as well. Many of the so-called "complexes" are simply conditionings of emotional states. The general procedures that apply to unconditioning conditioned emotions will apply in this area. It is probable, in the writer's opinion, that an approach through old motor habits of the past may often be a good "opener" to the interest of the psychoneurotic. It would not be surprising to find many "conditioned emotions" that are associated with early play frustrations. These may exacerbate the conditioned emotional states associated with other areas. For example, an individual with an inferiority feeling which is associated with behavior in battle may have had a reinforcing inferiority feeling related to lack of ability in sports, lack of physical development, or some other lack associated with physical education activities or ideals. The correction of the one may aid in "breaking" the other.

Both the psychiatrist and the corrective therapist will, we are sure, be aware that mistakes of diagnosis are sometimes made. It may be possible that

¹²D. J. LEITHAUSER, "Early Ambulation and Related Procedures in Medical Management." C. C. Thomas Co., 1946.

the corrective therapist will be able to detect things in the behavior of the psychoneurotic that may, when reported to the psychiatrist, lead to a suspicion that the diagnosis was incorrect and indicate a new approach to the patient. Hence, it would appear to be important to study the corrective therapy program for each type of psychoneurotic, and the expected responses of the patient.

2. In view of the fact that a corrective therapist is apt to be called to work primarily with the individual who is already maladjusted, it is easy to forget that findings in this field might carry over to prevention of psychoneurosis in the normal in school programs and in social situations generally. Corrective therapists should, therefore, remember that the work they are doing in this area should not of necessity be confined strictly to the situations found in a Veterans Hospital psychiatric department!

3. For the psychotic patient, new discoveries of methods of approach to different types of psychoses may be discovered by the corrective therapist working hand in hand with the psychiatrist. Again, a discerning, scientific imagination coupled with experimentation in various methods of approach to different types of psychotic patients should result in real increases in our knowledge in this area.

Research in Testing

Often the semi-subjective test may be very helpful, as when functional muscle groups are tested manually. At present, this field has been relatively well explored,¹³ hence

1. Standards of strength for various muscle groups, the recent work of Clarke,¹⁴ is to the point here, and it is highly probable that more work in this area will prove profitable.

2. There should be studies conducted to determine normal ranges of motion of different joints in each of the indicated planes of movement.¹⁵ It is suggested that differences may be found in individuals of different body builds. Hence, it should prove profitable to explore such differences in range of movement in various body types.

3. It is very probable that a rather good index of stroke volume of the heart may be worked out as a cardiovascular test involving pulse rate and blood pressure. The validation of such tests would have to come in connection with studies of actual

¹³LUCILLE DANIELS, MARIAN WILLIAMS, and CATHERINE WORTHINGTON. *Muscle Testing*. W. B. Saunders Company, 1947. For other references, see bibliography in this book.

¹⁴H. HARRISON CLARKE, "Objective Strength Tests of Affected Muscle Groups Involved in Orthopedic Disabilities." *The Research Quarterly*. May, 1948, pp. 118-147.

¹⁵JACK R. LEIGHTON, "A Simple Objective and Reliable Measure of Flexibility." *The Research Quarterly*. XIII:2,205-216. May, 1942.

NEEDED RESEARCH IN THE FIELD OF CORRECTIVE THERAPY

stroke volume which would probably be measured by the acetylene method or by some other of the research methods recognized in physiology. If such approximation methods could be worked out, they would be extremely useful for studying the effects of exercise on the heart in pathological heart cases.

4. Further elaborations of heart tolerance tests, such as the Barringer test,¹⁶ could well be worked on. The Barringer test is useful only for patients who can do exercises while standing. Similar tests need to be worked out for the patient who is recovering from such diseases as rheumatic fever, and who cannot yet do exercises in the standing position.

5. Tests of general tolerance of exercise may well be studied. Suggestions as to methods of approach may be had from careful consideration of the type of work done by Lowsley.¹⁷ For corrective therapy, Lowsley's exact technique may not be the one to use, but methods similar to this may well be adaptable.

6. Further studies need to be made for tests of general condition. Part of the weakness in present tests along these lines is due to the fact that the test builder has frequently not given due consideration to what his test is intended to measure; hence, some tests are used for purposes for which they were never intended. Tests like the Crampton test,¹⁸ the McCloy test¹⁹ for "present condition," the Brouha type step test,^{20 21} for general athletic condition, and the Schneider test,²² which is probably more a test for general health condition than anything else, are types of tests which have proven to be more or less successful. The McCurdy-Larson test²³ is also a test which seems to have usefulness

¹⁶T. B. BARRINGER, JR., "Studies of the Heart's Functional Capacity as Estimated by the Circulatory Reaction to Graduated Work." *Archives of Internal Medicine*. XVII:670-676, May, 1916.

¹⁷Oswald S. Lowsley, "The Effects of Various Forms of Exercise on Systolic, Diastolic and Pulse Pressure and Pulse Rate." *American Journal of Physiology*. XXVII:446-466, March 1, 1911.

¹⁸C. Ward Crampton, "A Test of Condition," *Medical News*, LXXXVII:529, September, 1905.

¹⁹C. H. McCLOY, "A Cardiovascular Rating of 'Present Condition,'" *Arbeitsphysiologie*, IV, 2:97-108, March, 1931.

²⁰LUCIEN BROUHA, "The Step Test: A Simple Method of Measuring Physical Fitness for Muscular Work in Young Men," *The Research Quarterly*, XIV:31-37, March, 1943.

²¹"Cardiovascular Tests," War Department Technical Manual, T. M. 8-292, pp. 282-3, December, 1944.

²²C. SCHNEIDER, "A Cardiovascular Rating as a Measure of Physical Fatigue and Efficiency." *Journal of the American Medical Association*, LXXIV: 1507-1510, May 29, 1920.

²³J. H. McCURDY and L. A. LARSON, "The Measurement of Organic Efficiency for the Prediction of Physical Condition in Convalescent Patients." *Research Quarterly*. VI:78-97, December, 1935.

in this field. Further studies need to be made to devise tests which measure specifically what is needed for the exercise program of corrective therapy in hospitals. All of these tests are more useful for detecting deviations from a patient's own norms than for yielding absolute scores.

7. More studies can well be given to tests for use by convalescents. The army type tests²⁴ are probably useful, but have not been studied as extensively as should be the case. Modifications of these are needed for different age groups and tests need to be worked out for the female sex as well as for the males.

Writing Needed

1. Manuals, which should be revised from time to time, seem to be indicated for the following fields: (a) Physiology of reconditioning. We now have good textbooks in the physiology of exercise, but in general, none of these is adapted to the physiology of corrective therapy for use with those who are ill. (b) Manuals relating the effects of different kinds of exercise, such as reclining, standing, exercises of different dosages, and intensities, when applied to patients of different physical conditions. (c) A manual of pathology as related to exercise. (d) A manual of corrective therapy as related to surgery.

It would seem that we should start with the more common conditions found in our hospitals and work first to produce adequate manuals for these conditions.

2. There should be studies on what to tell the patient. (a) What would be the best approach from the mental hygiene angle? (b) What should we tell the patient from the standpoint of physiology of exercise? (c) What do we need to tell the patient about the necessity for developing skills and the best ways of developing skills?

3. Philosophical. (a) How should one best be trained to be a corrective therapist? In the opinion of the writer, the best course of study has not as yet been elaborated. There should be more taken from the literature of medicine, and adapted to the needs of the corrective therapist.

(b) What should be the relationship between corrective therapy and physical therapy? So much more heat than light has been evolved in such discussions that it would seem to the writer that this problem should be discussed intelligently rather than emotionally. There are undoubtedly many borderline conditions which, particularly in time of war,

(Continued on Page 13)

²⁴War Department Field Manual, FM 21-20, pp. 332-349, January, 1946.

The Role of Therapeutic Dancing in a Corrective Therapy Program

By

Bernard Flaherty, M.D.

Philip J. Rasch, Corrective Therapist

Clint Rankin, Corrective Therapist

John DePalma, Corrective Therapist

The role of the Corrective Therapist in the treatment of neuropsychiatric patients must of necessity be extremely versatile. Certainly he cannot afford to neglect any form of physical activity which can make a significant contribution to the rehabilitation of his patients. One such neglected field is that of therapeutic dancing.

Our own culture has largely relegated dancing to a purely recreational function, but its use as a therapeutic modality is widespread among almost all primitive peoples. Acting on the empirical assumption that the survival of such rites through the centuries is indicative of the fact that they may actually possess some curative value, the authors recently initiated a study of the possibilities of dancing as an adjunctive therapy in a Corrective Therapy program in a neuropsychiatric hospital. The results have been so encouraging that it was felt it would be desirable to discuss the details in this Journal in order that they might be brought to the attention of others working with mental patients.

It is emphasized that what follows is not to be considered as definitive; it simply points the way for further study of a therapy which is believed to possess a great deal of value if properly employed, but which is at present in the purely experimental stage. Kurath notes that much study by dancing teachers and psychiatrists will be required to discover the "special therapeutic rhythms and choreography adapted to different ailments,"¹ and Lawton stresses that a medico-dance language will have to be developed before dancing can make its full contribution to therapy.²

The most difficult mental patients to treat are those who have regressed to the extent that they demonstrate almost complete inability to participate in

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¹TULA KURATH, "Medicine Rites and Modern Psychotherapy," *Journal of the American Association for Health, Physical Education and Recreation*, 20:726, November, 1929.

²SHAILER UPTON LAWTON, "Dance as Therapy," in *Dance Encyclopedia*, (Anatole Chujoy, editor; New York: A. S. Barnes and Co., 1949), p. 135.

any adjunctive therapy, or who, after a fair trial at these therapies, manifest no improvement or even begin to display disquieting signs of further loss of emotional resonance and increased withdrawal from their surroundings. Such cases have long been a matter of grave concern to those responsible for their treatment. Several months ago it occurred to the authors that perhaps an appeal to the more primitive expressions of emotion—music and dancing—would be valuable in stimulating such patients to return to reality.

The psychiatrists and Corrective Therapists concerned felt that participants in such a program would be physiologically and psychologically benefited by the rhythmic motions and emotional states induced by participation in such an activity. Emotional tenseness is correlated with physiological tenseness, which is incompatible with rhythmic movements. The James-Lange theory of emotions clearly implies that if sufficient physiological relaxation can be secured to achieve rhythmic movement, it will be accomplished by a corresponding emotional relaxation, which should at the very least render the patient more accessible to the establishment of rapport with the doctors and therapists. There is little that can be done in the way of treatment when a patient is acutely disturbed; anything which will lessen this disturbance and direct the patient's thoughts to associations on the level of reality is desirable.

All concerned were in complete agreement that the approach must be from the standpoint of physical medicine rehabilitation, not from that of a recreational activity. Van de Wall indicated the aims for such therapy when he pointed out that music might aid in arousing the patient's interest and participation in a pleasurable aesthetic activity associated with normal life, and thus reduce his susceptibility to the depressing influences of idleness, boredom and preoccupation with undesirable thoughts.³ With this in mind, the following treatment aims were established:

³WILLIAM VAN DE WALL, *Music in Hospitals* (New York: Russell Sage Foundation, 1946), p. 42.

THE ROLE OF THERAPEUTIC DANCING IN A CORRECTIVE THERAPY PROGRAM

- 1. General and progressive increase in emotional resonance.
- 2. Increased socialization and spontaneity.
- 3. Improved personal hygiene and grooming.
- 4. Increased accessibility to individual psychotherapy.
- 5. Increased participation in adjunctive therapies.

For the original study, a group of approximately twenty retarded patients, predominantly schizophrenic in nature and of markedly restricted emotional resonance, were carefully selected by the doctors and therapists. This group was exposed to a selected and progressive series of rhythmic stimuli, beginning with simple primitive rhythms and leading to the more complicated and less rhythmic modern configurations. The results have been so encouraging that this form of therapy was extended to include a catatonic group and a group of continued treatment patients.

The actual dancing is conducted with the cooperation of young women volunteer workers, one of whom is a dynamic experienced dancer whose contributions of time, energy and knowledge are invaluable. The actual supervising of the program is done by one or more Corrective Therapists. The psychiatrists consider that it is essential that these therapists participate actively in the dancing, as their association with the patients is on the basis of masculine activities and this serves to remove any anxieties the patient might feel as to whether rhythmic led by women is a social pattern in which a male may participate without loss of status.

The volunteer workers are instructed that they should encourage the patients to talk as well as to dance. They are to display an attitude of encouragement toward them and to endeavor to build up their self-confidence by praising their dancing. Their basic attitude is to be one of kindness.

The patients are to be treated on an equal basis and their first faltering steps toward resocialization are to be encouraged and praised. At the beginning of each session, the volunteer workers are informally introduced to each patient. The first names of the patients and volunteer workers are used exclusively. However, if the patient indicates interest in the volunteer worker's last name, or manifests any other interest of a personal nature, this response is quietly encouraged. The general attitude is one of informality and spontaneity.

The dancing is held in a well-lighted and cheerful room. Only patients for whom this activity is prescribed by the ward psychiatrist are present, as it is found that the presence of non-participating patients is a definitely disturbing factor. The partici-

pants are first formed into a circle, in which volunteer workers and the therapists are spaced at equal intervals and all are holding hands. The leading dancer takes her place in the center of the circle and leads the group in simple steps and arm movements to recordings in waltz time. The purpose of this is to encourage an attitude of ease, informality and friendship on the part of all participating.

Once the desired attitude is established, a stimulating folk dance is introduced. For this *La Raspa* (Pan America 136) is a favorite. Its simple yet vigorous steps provide a workout which leaves the patients panting and ready for a rest. This is provided by having them sit on the floor, retaining their circle formation. A rhythmic record, usually *Sudanese Festival Song*, (Disc 1511A), from *Folk Music of Ethiopia* (Disc Album 141) is now placed on the phonograph. The leading dancer sets the time and hand movements at the start, but the patients are encouraged to improvise and give expression to their feelings through rhythms and movements of their own devising. Often these are picked up by the leading dancer, and by her actions transmitted to the entire group. At such times, an appearance of gratification is often evidenced by the patient. These stimulating rhythms may be followed by others of a more gentle, relaxing type, frequently Hawaiian movements done to *Lovely Hula Hands* (Decca 25340A).

The next portion of the program particularly stresses resocialization and is devoted to the actual teaching of basic modern dance fundamentals, such as the box step, the magic step, etc. It is planned that every patient shall gain a feeling of creative accomplishment by actually learning a new hobby and interest activity. The fundamental steps are taught as a group activity, usually with the patients in a line and the volunteer workers demonstrating the step in front of them. Each worker then takes two or more patients and practices as a unit, after which she dances with the patients individually.

The socially non-acceptable behavior occasionally displayed by psychotic patients may occur at this time; however, the therapists, who are constantly alert for such behavior, quickly and unobtrusively insure its discontinuance. Such happenings are met with a calm, unpunishing attitude, but it is extremely important that the volunteer workers be warned ahead of time that they may occur and be assured that the therapists will stop any such actions before they progress to the point of unpleasantness.

During the social dancing, the therapists themselves remain more or less inactive so far as actual participation is concerned, but occasionally it is found necessary for them to act as partners for pa-

THE ROLE OF THERAPEUTIC DANCING IN A CORRECTIVE THERAPY PROGRAM

tients who cannot accept the proximity of female partners. The therapists, however, perform every movement as it is taught, since it has been observed that the patients become reticent in their own participation if the therapists simply observe.

Patients without a partner will frequently display spontaneous and individual steps of their own creation. This is encouraged and the ward psychiatrists have instructed the psychiatric aides to encourage the patients in the dancing class to attend the recreational dances which are held for their building. Needless to say, definite progress toward re-socialization is registered when a patient who has never danced before attends his first social affair and finds it possible to mingle with the group on an equal basis.

The dancing session is concluded by forming a straight line, alternating the workers and patients. Each individual places his or her hands on the waist of the person in front. The dancer at the head of the column conducts the group through movements typical of the "snake dance," with the dancers stamping their feet in rhythm to the music.

As typical examples of successful results achieved through therapeutic dancing, the following case histories may be cited:

Patient A is a 26-year old white male schizophrenic, with catatonic features. He was extremely slow in gait, mute, careless in appearance, with slight protrusion of the shoulders and head. After a few months of dance therapy, the patient has responded to the extent of carrying on conversations with the therapist and volunteer workers. At the close of the dance, he remarks to his partner that he enjoyed her company and thanks her for helping him. His appearance has improved and his posture is now erect, so that when he walks he appears alert, with head up.

Patient B was an extremely regressed 26-year old white male schizophrenic, with catatonic features. He was hostile and negativistic about going to the adjunctive therapies, always wanting to be left alone. The therapist, with the ward doctor's advice of "total push" for the patient, managed to keep him in the dance therapy activity. With the help of one volunteer worker, who gave the patient all possible encouragement and praise during each session, remarkable results were achieved. The patient is now alert, eager, neat in appearance, and helps the therapist with the other patients in the dance therapy program. He has become readily accessible to other adjunctive therapies and displays enthusiasm in the work to which he is assigned.

Patient C was a 25-year old white male depressive case. He would not take part in any hospital activity and was not interested in his personal appearance. For the first three weeks of therapeutic dancing, he would only listen to the music, refusing to take any part in the dancing. The therapist then noticed the patient had begun to keep time to the music and immediately had one of the volunteer workers ask the patient to dance. His reaction was favorable and was accompanied by attention to his personal grooming. He is now at home and reports indicate he is making a satisfactory adjustment to his environment.

NEEDED RESEARCH-

(Continued from Page 10)

might well be treated by either group, and both groups should be well trained to take care of them.

(c) It would seem to the writer that there might well be a study made of the types of training that should be given to corrective therapists working for the Veterans Administration and that have not been covered in the courses in physical education that the corrective therapists have had before going into this specific type of work. It would then be well for some one in the Veterans Administration to prepare in-service training courses something like correspondence courses, so that personnel coming into the work might get that training without having to take time off to go to school.

These suggested studies given above, together with those which will be found in the research committee's report given at the 1950 convention by E. M. Sanders, should provide a start on topics for study that would enable any group of corrective therapists or physiatrists to begin some worthwhile research. It would seem to the writer that, in the beginning at least, studies should be selected which give promise of producing results that will be of direct usefulness to the program. Pure science studies may well wait for some time, or perhaps be carried on simultaneously with more applied studies. As more researches are conducted, the program should improve, and the status of those conducting the program should rise.

(It is suggested that physiatrists and corrective therapists who conceive of other research topics which they themselves do not plan to attack, should send a memorandum outlining such topics to the Research Chairman of the Association for Physical and Mental Rehabilitation. These collected topics might be published once a year.)

Preliminary Report of a Survey of the Research In the Veterans Administration Hospitals

Conducted in 1949 by E. M. Sanders, Assistant Chief, Corrective Therapy Division, PMRS,
VAMTG, Kennedy Hospital.*

An organization supporting a Journal, must be able to present scientific knowledge and professional stimulation and guidance to its membership and the interested lay readers. The Officers of Our Association from the beginning have been conscious of the fact, that a program of research is necessary in any field of therapy. When the Association was organized in December of 1947, the Office of Director of Publications and Research was established.

This year a chairman of research was appointed by our President. It was decided that the status of research in Corrective Therapy in the Veterans Administration Hospitals could be determined most economically by the questionnaire method. It was the opinion of your President, that future plans for the development of our research program might be organized. The response to the questionnaire; the number of studies already reported in the JOURNAL, and the wide range of the areas of interest, is very encouraging.

This report is an attempt to show the amount of research that has been completed, is being conducted; and planned for the future. This report briefly presents the findings obtained from the questionnaire sent to the Chiefs of Corrective Therapy in the Veterans Administration Hospitals last October.

It was recognized that the type of research that could be carried on in the V. A. Hospitals, was limited for two obvious reasons—(1) the heavy patient load and (2) the lack of specific training in research. An active committee carefully selected, can be of real help in promoting research. It is the hope of your chairman that it will be done at this convention.

The following letter type questionnaire went to the Chiefs of Corrective Therapy last October. Let me read it—

Old Lancaster Road
South Sudbury, Mass.,
October 3, 1949

Dear Mr.

The Officers of your Association want to report at the next Convention in Memphis, Tennessee, the research that has been completed; the number of studies now being carried on; the number being planned and to determine what type of research

* (This report presented at the Fourth Scientific and Clinical Session of the Association in May 1950 at Memphis, Tenn.)

will be most beneficial in Corrective Therapy in the future. Will you help by answering briefly the following questions?

- 1—What research, in which Corrective Therapy has participated, has been done at your hospital?
- 2—Has this study been reported in our JOURNAL?
- 3—By whom was it initiated and conducted?
- 4—Is any research being conducted at present?
- 5—What type of study is it?
- 6—How soon will it be completed?
- 7—Are you planning a study this year?
- 8—Do you need help in it?

There are many facts still to be determined in the application of exercise as a therapeutic measure. The sooner these facts are obtained, the better and more efficient job of Physical and Mental Rehabilitation we can all do.

Yours for a prompt reply,

E. M. Sanders

Chairman, Research Committee

Just a few facts taken from the questionnaires.

- 105—questionnaires were sent out
54—have been returned
38—report a total of 63 studies
16—reported no studies

This is a good beginning. The broad scope of the different phases of Corrective Therapy that are being studied is very gratifying.

The answers to Question 1, show (22) of the studies deal with problems that are an effort to improve the Corrective Therapy treatments of the neuropsychiatric patient. Eleven (11) of the studies are attempting to determine the value of exercise therapy in neurological cases. Four (4) when completed, will show the effects of exercise preceding and supplementing drug therapy. Six (6) have been related to the effects of exercise therapy in reducing convalescence in orthopedic cases. Twenty (20) classify as miscellaneous. Better titles than were reported on the returned questionnaires are necessary before accurate classification can be made.

Question 2, is easily answered. 16 of the 62 studies have been reported to the JOURNAL. A wealth of material should be available to the Editor next year.

Question 3, "By whom was the study initiated?" shows quite conclusively that we still live in a free country.

PRELIMINARY REPORT OF A SURVEY OF THE RESEARCH IN THE VETERANS ADMINISTRATION HOSPITALS

- 31-were initiated by Chiefs of Corrective Therapy and Corrective Therapy Instructors.
- 13-by medical personnel, 8 of the 13 Chiefs of Physical Medicine
- 1-was initiated by a hospital manager
- 2-by physiotherapists
- 1-by Central Office
- 1-by a representative of a medical society

A Chief of "T.B." service; the Mental Hygiene Service; a Chief Clinical Psychologist and individual Ward doctors also initiated studies.

This shows the interest in the renewed emphasis that the experiences of the last War's Reconditioning Service has placed upon exercise as a therapeutic agent.

Question 4 wanted to know if any research was being conducted this year? (1949)

30-answered that is was

8-that it was not

Question 5, "What type of study is it?" seemed to be a poor question.

It's purpose was to furnish information that might be passed on to the membership, by indicating techniques, which vary in conducting research. It was also thought to be an important question, for the reason that little time is available for research and that the current practice might indicate the types that our busy personnel could use to advantage.

Question 6 "How soon will it be completed?", gave no problem

2-were to be completed in November

1-in December, and-

1-in each of the following months of 1950, Jan., April, May, July and Oct.

These statements should put "glee and great joy" into the heart of the Editor for the ensuing year. The studies still under way should furnish more informative articles for the JOURNAL.

In answer to Question 7, "Are you planning a study this year?"

8-said they were

7-said they were not

2-were undecided

4-were continuing studies already started

The answers to Question 8, "Do you need any help with it?" show again how our Democracy works.

11-said they did not need any help

3-said they did

1-needed no help at present

1-didn't know

2-were undecided

2-wanted information on what others were doing.

The rest made no reply.

It has been evident to your chairman that our Corrective Therapy workers are very anxious to learn more about the effects of scientifically applied exercise as a therapeutic agent. I hope, in the ensuing year, it will be possible for us to encourage research in a constructive manner.

I should like to present some of the suggestions received by Dr. Edward D. Greenwood, of our Advisory Board and Director of the Southard School in Topeka, Kansas.

Dr. Greenwood classified the titles of the researches into Psychiatric, Neurological, Miscellaneous, Orthopedic, Medical, Psychosomatic Medicine, Geriatrics and Therapy.

A few titles selected at random, will indicate the problem we faced to accurately classify the studies. Under the heading Psychiatric, we find the following titles.

1—"Physical Tolerance of Insulin and Electric Shock Patients."

2—"Group Therapy Program."

3—"Calisthenic Warm-up Exercises with E.S.T. patients immediately prior to E.S.T. treatments."

And a few titles from the Neurological Group—

1—"A Physical Medicine Program in the Treatment of Multiple Sclerosis."

2—"Hemiplegic Patients"

3—"Osteo-porosis in Paraplegia"

Under Miscellaneous classification, a few titles.

1—"Music-Corrective Therapy"

2—"Manual Arts Therapy"

3—"Re Integration Research Program."

Just what these last three titles mean was not clear. These few titles do indicate quite clearly, however, that an active Research Committee, is needed. Dr. Greenwood also suggests—"that we start basic plans for research projects and if possible, either ask for the Veterans Administration or another organization, to have a research consultant available to the Chairman to help with the numerous excellent pieces of potential research which exist in the field of Correctives."

Dr. H. Harrison Clarke, also a member of our Advisory Board and Director of Graduate Studies at Springfield College, Springfield, Mass., has made these suggestions after an analysis of the questionnaires.

"The reports show, that in general the Corrective Therapists are working out their studies with medical personnel, which is appropriate and desirable. The titles given in the questionnaires are inadequate for the most part. At times they leave one guessing as

PRELIMINARY REPORT OF A SURVEY OF THE RESEARCH IN THE VETERANS ADMINISTRATION HOSPITALS

to what is meant. Also, no attempt is made to describe the research techniques and procedures utilized. As a result, it is impossible to form an opinion of the soundness of the research completed and underway.

"The question of evaluation is a very serious one in any research problem. The evaluation process should be carefully considered in any research problem involving patient progress. We need some very serious work in this area, which is the basic reason for our own studies in strength testing.

"I am convinced that any field will move forward only as rapidly as its scientific knowledge becomes available."

Dr. Clarke makes the following suggestions:

- 1—Formation of a Research and Problems Committee that will be continuously active during the year.
- 2—Sessions on techniques of research at National Convention, including proper reporting of research for professional journals. Articles of this type might also be published in the JOURNAL.
- 3—Conduct School on research techniques similar to V. A. schools on other phases of Corrective Therapy."

My reactions to the questionnaires have been presented. In addition I should like to recommend that—

- 1—This session approve the appointment of an active committee.
- 2—I should like to present the following names for your consideration. Each member has expressed his willingness to serve.

Dr. Edward D. Greenwood, The Southard School, Topeka, Kas.

Dr. H. Harrison Clarke, Director of Graduate Studies, Springfield College, Springfield, Mass.

Mr. Paul Roland, Danville, Illinois

Mr. Verle J. Wilde, Salt Lake City, Salt Lake, Utah.

I shall be happy to serve again as chairman, if it is possible to succeed myself and it is the wish of the incoming Officers that I do so.

3—That, due to the apparent lack of specific training in research, the committee be charged with the responsibility of preparing constructive outlines on methods of research best fitted to our limited personnel, and the heavy patient load we carry.

4—That these outlines be made available either through the columns of the JOURNAL or in mimeograph form.

5—That training in research be conducted both at

the N. P. Corrective Therapy Schools and the GM&S Schools for Corrective Therapy to be conducted in the future.

6—And that the Committee assist the Director of Research and Publications, by keeping him informed when studies are completed.

Respectfully submitted,

EDITORIAL Research in Corrective Therapy

The growth of our Association for Physical and Mental Rehabilitation, has been quite in keeping with "the March of Time." This is encouraging. We are moving on. This should continue at an increasing tempo.

Our "sights" have been aimed high. Attendance at our Annual Clinical and Scientific Session this year has shown a phenomenal increase. From an attendance of 250 in Chicago, Illinois in 1947, we have arrived in four years to an attendance of 750.

But this is not enough. As an analysis of the "Report of the Research Committee" indicates the thirst for information that is stimulating our busy Corrective Therapists, all over the country to "get the facts," concerning the value of exercise as adjunctive treatment. This report also shows conclusively that help and training is needed, because of the wide range of activities being studied.

A thoughtful reading of Dr. McCloy's article on page 3 of this issue is convincing evidence of our present challenge and opportunity.

The accumulating clinical evidence of the values of physical activity—when started as soon as the physician has completed the medical and surgical treatments—is convincing proof, that convalescence can be shortened and relapses reduced in frequency, but until we have some scientific answers to the many questions still unanswered, we face the fact that many studies need to be initiated, completed and published.

And let us not forget that the entire field of Physical Medicine Rehabilitation Service needs scientific proof for some of its techniques and policies.

The opportunity and challenge to all divisions are many. Consultants in your area will soon be appointed. We urge you to make use of this service. When you have a study to initiate, or if you know of anyone who has, send the preliminary plans to the Chairman of the Research Committee. From time to time, a list of studies under consideration will be published.

The President Speaks

With a possibility of the present conflict becoming a total world crisis, it is more important than ever that we, as an Association dedicated to the treatment of the disabled, be strong and alert to move in any direction that will assist our national cause.

The training and experience of our members will be of vast importance when the time arrives to care for more casualties of the present action. However, it must not be forgotten that we have an obligation to those who already occupy our hospital beds and who will need our continued efforts to restore them to a productive life.

Every effort should be made to study new methods, techniques and procedures in order that we will be better able to treat the patients in our care. This may be accomplished through added research, the exchange of knowledge by written professional papers, and by making every effort to attend schools

and clinics where advanced work is in progress. It is important that we seek and accept medical leadership so that we may continue to grow and thrive as a Professional Organization.

As our members will be serving both in and out of the service, it is important that each one keep in touch with the officers of the organization so that we will know of your whereabouts and will be able to keep you informed. At the writing of this letter at least one of the officers has received his call into service and arrangements have been made to cover his responsibilities until his return—your officers are also planning for any eventuality.

It is imperative that we continue plans for next year's convention and for the years to follow. Indications at the present time are that the convention in Los Angeles for 1951 will be held in July. The exact dates to be revealed in a later letter.

The Representative Assembly for 1950-1951

Area No. 1

Goodsell, Van D., 289 Westwood Ave., S. I., N. Y.
Montovano, Louis, VAH Manhattan Beach,
S. I., N. Y.
Tauber, Arthur D., VAH, Bronx, N. Y.

Area No. 2

Edman, Leon, VA Central Off., Rm. 880,
Washington, D. C.
Kopf, Chris, VAH Lyon, N. J.
Robinson, Harold M., VAH Roanoke, Va.

Area No. 3

Davis, Philip R., VAH, Columbia, S. C.
Sanders, Everett M., Kennedy VAH,
Memphis, Tenn.
Speer, E. E., Jr., Rt. No. 1, Box 10-A, Smyrna, Ga.

Area No. 4

Kreick, Raymond, 51 Keith Drive,
Battle Creek, Mich.
Roland, Paul, VAH Danville, Ill.
Root, Leslie M., VAH Wood, Wisconsin

Area No. 5

Nall, Boyce J., VAH Temple, Texas
Tractir, Jack, VAH Houston, Texas
Wilson, Lee, Winter VAH, Topeka, Kansas

Area No. 6

Behan, Dwight T., VAH, Palo Alto, Calif.
Rankin, Clint B., 1920 Overland,
Los Angeles 25, Calif.
West, Philip A., 5688 Hub St., Los Angeles, Calif.

Remedial Aquatics at Oliver General Hospital

HENRY J. ROCKSTROH

Captain, MSC

Chief, Physical Reconditioning Section

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The purpose of this paper is twofold: To stimulate a greater interest in remedial aquatics on the part of all individuals concerned with the use of this modality. Secondly, to present the remedial aquatic program as conducted at Oliver General Hospital including the administrative procedures, physical facilities, and certain aspects of the treatment program.

There have been many terms applied to the use of underwater exercise in the treatment of the diseased and injured. Whatever the term, the use of aquatics is an extremely valuable asset in the program of Physical Reconditioning or Corrective Therapy, serving not only as a subsidiary to the therapeutic armamentarium but also playing a prominent role in the promotion of the patients psychological outlook toward recovery. We think of Remedial Aquatics as one of the many components of the all inclusive term "Hydrotherapy." Remedial Aquatics embraces the use of therapeutic exercise assisted by the natural physiological benefits of heat or cold, massage, buoyancy, and resistance together with the psychological values of total or partial immersion.

Psychological and Physiological Values: Singularly or in combination the psychological and/or physiological values of remedial aquatics lend materially to rapid recovery of complicated and uncomplicated cases. Only primary psychological and physiological values in connection with aquatic activities will be discussed.

The psychological influences which are unquestionably important factors in the process of producing the many desired results through the use of the therapeutic pool are varied and to a large extent dependent upon the emotional makeup of the patient; however the values that follow may be generally applied. For the most part aquatic activities are enjoyable and have a wholesome recreational effect. Mere freedom from the bed itself improves the patients outlook and produces a more receptive attitude for treatment which may follow. The degree of incompetency is greatly reduced and not nearly so noticeable to others when the body is immersed. The ability to move freely and voluntarily, regardless how slight, arouses interest and stimu-

lates effort. The new environment provides a healthful diversion, thereby relieving boredom, frustration, and discouragement during convalescence. The mental concentration required in learning new skills also helps to relieve mental tension and aids in restoration of self-confidence by mastery of these skills. Realization of movement in water when it could not be accomplished otherwise, and the increase of action without pain, when such movement normally produces pain, are important factors in reducing inhibitory spasm through decrease in pain and fear. A final psychological value is that improvement is quite obvious and readily appreciated by the patient.

A definite physiologic reaction is produced by the application of heat through the medium of water. Circulation is prominently increased as the blood is transported from deeper body areas through the lungs to the dilated capillaries under the skin and the affected areas are furnished with a much needed increased blood supply that has been improved both in quality and quantity. There is a noticeable increase in activity of the sweat glands which aids materially in the elimination of waste products. The warm water relaxes the muscles and ligaments, allowing a greater range of motion with much less effort and pain. Buoyancy permits a more effective application of therapeutic exercise to various muscle groups. Only when the body is completely immersed are injuries to the back, hip joint, upper arm, and the leg easily accessible to treatment. Whirlpool baths are inadequate in these cases. In connection with only partial immersion in comparison with total immersion failure to exercise the body as a whole results in an increase of body weight and a loss of general muscle tone.

The Oliver General Hospital Pool: We do not have a designed therapeutic pool, however it is of the standard Army type; one hundred (100) feet long and forty-two (42) feet wide, housed in a permanent type building. Water depth ranges from three feet to ten feet. When full the tank has a capacity of 160,000 gallons which is completely changed through a filtration plant three times every eight hours. During the filtration process the water is

REMEDIAL AQUATICS AT OLIVER GENERAL HOSPITAL

chemically treated with sodium ash for the correct PH, aluminum sulfate to form a film on the filter bed to keep small particles such as hair and lint from going into the filter aggregate and reappearing in the water, calgon which is a water softener and rust preventive, and chlorine for killing harmful bacteria. Hourly, chemical analysis is made to assure proper chemical treatment. The water is heated by a thermostatically controlled booster steam heater which is capable of providing, within limits, any desired temperature. The pool area is heated by alternately filtered hot air.

- Equipment: To provide a safe and easy method of moving litter patients from the deck to water level, incline bronze steps with a crimped tread twelve inches wide and four feet long with sturdy railings were installed. These steps have been so placed that they may be used for varying sitting depth for certain leg and foot exercises. In addition, various other devices such as parallel bars, swim fins, floatees trunks, and adjustable plinth are utilized in the treatment of orthopedic patients. For the psychiatric patients goalhi, rubber basketballs, volleyballs, and cage balls are provided.

- Administrative Procedures: The pool is utilized entirely as a therapeutic agent during the normal working day during which time patients are permitted to enter only on prescription. All except those classed as psychiatric patients are treated individually by two Physical Reconditioning Instructors who are qualified senior life guards. Physical Medicine Consultants Treatment Request (SGO Form 253) containing detailed information prepared by the Chief, Physical Medicine Service precedes the patient to the pool. Generally, there are only two classifications of patients, bed and ambulatory. In either case, treatment commences with the physiological tolerance of the individual and becomes progressively more strenuous as tolerance increases. The initial interview of the new patient by the instructor takes place after a study of all information on the physiatrist's form. This first contact is regarded as highly important to the success of the remedial aquatic program, because at this time the patient is oriented as to what should be accomplished and how. Specific exercises as prescribed for the patient's disability are demonstrated and applied with particular emphasis on contraindicated movements or activities. When applicable, actual swimming skills are prescribed as the treatment progresses. If properly controlled this method of therapy is highly successful as it relieves inhibitions associated with his injury by preoccupation as he strives

to learn the skill while performing the exact desired movement.

Treatment Program: Ordinarily patients are required to remain in the water a minimum of thirty minutes. Temperature of the water is 90 degrees F. during the winter months and 85 degrees F. in the summer. Surrounding room temperature is five degrees warmer. These figures are empirical. Preliminary study is being conducted by the authors to determine the optimum water temperature and time of immersion required to obtain the most beneficial results. The study is felt necessary owing to the wide variance of opinion these matters have created among leading authorities.

The most unique feature of this program is the treatment of long term bed patients. Such patients are transported to and from the pool via litter and ambulance. The tremendous psychological values, not to mention the physiological benefits, that this service renders cannot be over-emphasized.

To point out these values and to present our treatment system we cite the specific case of a 34 year old soldier admitted to this institution as a transfer from a station hospital. He was referred to the Chief, Physical Medicine Service, 13 January 1950, who made the following remarks as taken from the Summary of History and Pertinent Physical Findings" section of the physiatrists form. "Patient was injured in an auto accident at Fort Benning, Ga. on 10 November 1949 and suffered injury to his head and pelvis. X-rays at the time revealed possible fracture of the acetabulum. Patient was transferred to Oliver General Hospital on 15 November 1949 for further observation and treatment. X-rays here revealed fracture of the pelvis in the region of the junction of pubic bone with the ischium and possibly involving the acetabulum on the left. Patient has been treated conservatively, primarily with bed rest. He comes to this service for treatment. He is a well developed and nourished 34 year old male who is a bed patient, and does not appear to be actually ill but complains of considerable pain in the region of the left hip. There appears to be slight atrophy of muscles around the left hip and palpation reveals considerable tenderness around the entire joint. Patient has voluntary motion but the extent of this was not determined because of the pain."

Patient was referred to the Physical Reconditioning Section with the following prescription: Continue bed exercise. Pool via ambulance—for exercise to increase strength and range of motion of left lower extremity. The patient was initially placed on a mild exercise regime consisting of the following motions: abduction, adduction, extension, and flexion of both

REMEDIAL AQUATICS AT OLIVER GENERAL HOSPITAL

lower extremities at the hips, and light weight bearing on affected extremity in shoulder deep water. At first the patient was unreceptive to this type of treatment during the winter months. However, these trips later became the highlight of his day as it afforded relief from constant bed confinement. During weekly observations, a gradual increase in strength and range of motion was noted. Commencing with the fourth week of treatment, the patient was placed on a more strenuous exercise routine to include exercise combining weight bearing at the hip in waist deep water, and finally swimming skills such as the breast stroke kick and flutter kicking with the front and back crawl, the combination of which gives abduction, adduction, extension, and flexion at the hips against the resistance offered as the body is propelled through the water. Re-evaluation on 6 March 1950 by the physiatrist was as follows: "Patient continues to show improvement. He is now fully ambulatory with the aid of crutches but is still non-weight bearing except when receiving hydrotherapy. Recent X-rays show light demineralization of head of femur. Range of motion at the hip is good in all planes but there is slight pain in internal and external rotation. Left quadriceps are moderately atrophied. Otherwise examination is essentially negative." At this time remedial aquatic treatment was ordered continued with instructions to strengthen musculature of the affected area. Patient showed continued progress and was discharged in a weight bearing with crutches status, from the Physical Medicine Service 17 March 1950 after receiving a total of 45 remedial aquatic treatments.

Up to this point discussion has been primarily confined to the treatment of orthopedic patients. It is not our intention to imply that this type therapy does not likewise serve as an adjunct to the definitive treatment of psychiatric patients. Treatment in the therapeutic pool is limited, for the most part, to closed ward patients who are transported to and from the pool by bus. Depending on the number of patients involved, a varying number of corpsmen assist the Physical Reconditioning Instructors in caring for the patients on the bus and in locker, shower, and pool areas. Trained instructors plan and take an active part in various low organized aquatic activities in which patients are encouraged to participate. A certain degree of success has been attained in teaching non-swimmers some form of swimming skill. These periods usually last approximately forty-five minutes and occur just as often as the ward doctors will permit, not to exceed five sessions weekly.

Detailed records on each patient are maintained

by the instructors on a special form devised for easy handling and accuracy. Any unusual occurrences, persistent pain or abnormalities are called to the attention of the physiatrist.

At the time of this writing there were a total of thirty different type injuries receiving Remedial Aquatic Treatment; the most common of which were fractures of femur, radius, ulna, tibia and fibula, dislocations and knee derangements.

The following statistics are offered to lend an appreciation of the volume of work accomplished during the first quarter of 1950:

Number of Patients Treated	330
Number of Treatments Administered	1,986
Total Patient Hours	1,449
Daily Average Attendance	44.81

Summary: Remedial aquatics, one of the many components of hydrotherapy, embracing the use of therapeutic exercise assisted by the natural physiological and psychological benefits of immersion, is based on sound principles subscribed to by the medical profession. It is that unique phase of hydrotherapy which treats the whole individual rather than just a part and has proven highly efficacious not only in many cases involving physical disabilities but also in the treatment of psychiatric patients. The use of this modality is deserving of even greater recognition, exploration, and development by those engaged in the field of physical and mental rehabilitation.

Calendar of Events

American Congress of Physical Medicine

August 28 to Sept. 1, 1950
Hotel Statler, Boston, Mass.

California Chapter of the APMR

Sept. 11, 1950-8:00 P.M.

Cedars of Lebanon Hospital, Los Angeles, Cal.

The National Assoc. of Rehabilitation Therapists

Sept. 14 to 16, 1950
Topeka, Kansas

New York Chapter of the APMR

To be announced.

American Occupational Therapy Association

Oct. 17 to 19, 1950
Hotel Colorado, Glenwood Springs, Colo.

National Rehabilitation Association

Oct. 23 to 26, 1950
Hotel Statler, New York, N. Y.

National Society for Crippled Children and Adults

Oct. 26 to 28, 1950
Stevens Hotel, Chicago, Illinois

Instructions in Physical Orientation and Foot Travel

The Industrial Home for The Blind
520 Gates Avenue, Brooklyn 16, N. Y.
January, 1950
MR. HARRY SPAR, Director

INTRODUCTION

It is the function of the lesson plans that follow to present the basic content for an adequate course of training in physical orientation and foot travel in an organized form in order to lend logical sequence to its use. It is not intended that each lesson plan should be completed within a single session of instruction. The background physical condition and mentality of each client to whom the training is offered, and the emotional and psychological preparedness of the client to undertake training, are all varying factors which will determine the speed at which the content of each lesson plan will be satisfactorily mastered.

The content of the lesson plans is not intended to be restrictive. It is anticipated that these plans will be used only by instructors who are equipped by general background, special training, and personal resourcefulness to make the adaptation of the plans and lend the improvisation to them that the special needs of individual clients may require.

Effort has been made to limit the content of the lesson plans so as to make it directly concerned with training in physical orientation and foot travel, but it is expected that the instructor's understanding of sound pedagogic procedure and appreciation of the broader objectives that can be served through the providing of such training will lead him to provide motivation and explanation in the use of the plans which may not, strictly speaking, be essential to the achievement of the specific objectives of the plans but which will lend special interest and value to the client's achievement of these objectives.

The instructor, for example, will find a pleasant and useful method of adding motivation to the client's day to day training activities to lie in planning the various routes of travel employed in the lesson plans, insofar as possible, so that they will terminate in the vicinity of a restaurant or cafeteria where the instructor and client can avail themselves of light refreshment and review the problems of the day's training activities in an informal, relaxing atmosphere, free of the inhibiting tenseness that so frequently is engendered by criticism in the ordinary

instructor-pupil relationship. This method too, will provide excellent occasions for the client to learn, under sympathetic supervision, how to conduct himself in a public eating place—how to find a table, give his order, handle his food, pay his bill, etc.

The vocational, social, and economic assets which result from the ability to remain oriented within one's environment and enjoy independent mobility are obvious; but this ability provides a psychological asset which is far more fundamental and which the instructor will wish to bring home to the client:

The extra effort and, frequently, the embarrassment which may be entailed in a blind person's exploration of his environment through the tactile and kinesthetic senses too often tend to cause blind persons to abandon their effort to substantiate their concepts in reality. They tend to develop a verbalism which is largely void of any verifiable, concrete basis. Their information, achieved through an excessive submission of their inquisitiveness to authoritarianism is often founded on erroneous inferences which leave the content of much of their thought devoid of primary, acquired at first hand, knowledge. Often, to compensate for this weakness, an extensive but unsubstantial type of erudition is developed which, failing to satisfy the requirements of objective verification which intellectual intercourse on a high level requires, tends to make the blind person withdraw into himself and develop a personality which is lacking in emotional vigor and social maturity.

The problem indicated in the foregoing paragraph may be forestalled or very largely solved by the simple device of encouraging the blind person to use his tactile and kinesthetic senses without undue inhibition and to be alert to, and strive consistently to attribute significance to, all of the cues as to the makeup of his environment and the activities going on in it that come to him through his remaining senses. The instructor in physical orientation and foot travel is in an excellent position to do this. In the course of his work with a blind person, he

INSTRUCTIONS IN PHYSICAL ORIENTATION AND FOOT TRAVEL

should frequently ask him to interpret sounds, odors, vibrations, etc. and should lose no opportunity to provide him, by affording him tactful and kinesthetic exploration, concrete concepts of any commonplace objects or activities that may not adequately be understood. Interpreting correctly the sound of a street cleaner's shovel, the odors that may come from a laundry, the noise and vibration engendered by the use of a pneumatic drill, and innumerable similarly commonplace occurrences will assure the blind person the kind of orientation in his environment that alone can produce the emotional and intellectual interplay between an individual and the social group that is essential to true psychological health and social effectiveness.

The instruction of a blind person in physical orientation and foot travel should be, and, if properly conducted, will be one of the most fundamental elements in his overall adjustment and rehabilitation.

PHASE 1

PURPOSE: To orient the client to the training floor, the resident building, and other areas which he will be required to traverse in the course of his training at the I. H. B.

LESSON PLAN #1

1. Specific Objectives

- a. To teach the client the layout of the training floor and the resident building so that he may move about the floor and building freely and with confidence.
- b. To teach the client to recognize reference points — water fountains, approaches to stairways, fire extinguishers, etc. — so that he may use them to identify the area in which he may find himself and keep his bearings precisely within it.
- c. To teach the client to traverse, without faltering, the area between the training floor and his dormitory, his dormitory and the dining room, the lavatory, the recreation room and roof recreation area, the outside exit, the route to the street via the fire escape, and all other routes which he may be required to use frequently.

2. Procedure

- a. Establish rapport with the client through informal, introductory discussion of what the client may expect to derive from his instruction in physical orientation and foot travel and what the instructor will require of the client in the course of this instruction.
- b. Tour the training area and resident building with the client, pointing out all significant points of

reference, and allow the client to explore the areas between the points of reference and to measure the distances between them in terms of the span of his arm spread, the time and energy required to move between them and help him study their relationship to each other.

c. Practice traversing the specific routes indicated under "c" above until the client, employing his cane, is able to use them with confidence and safety and without the aid of the instructor.

d. Practice traversing the specific routes indicated under "c" above until the client, without employing his cane, is able to use them with confidence and safety and without the aid of the instructor.

LESSON PLAN #2

1. Specific Objectives

a. To acquaint the client with basic rules of safety as they apply to his traveling in familiar territory indoors.

b. To caution the client against possible safety hazards in his traveling in familiar territory indoors.

2. Procedure

a. Impress upon the client the importance of keeping to the right at all times.

b. Point out to the client the injuries that may result from his walking about with a lighted cigarette, cigar, or pipe.

c. Show the client how to carry tools and utensils having sharp corners, points, or edges so as to avoid the danger of injuring others in moving about or of injuring himself in the event that he should stumble, fall, or bump into a rigid object.

d. Aid the client to regulate his walking speed so as to make it consistent with the considerations of safety while at the same time permitting free expression of the client's personality.

e. Acquaint the client with the regulations related to the reporting of fires or injuries to himself or others that might require first aid and the evacuation of buildings in the event of fire or other danger.

f. Caution the client to turn off all machinery and to return to their proper places all tools and equipment when not in use, to not obstruct aisles, to leave all doors either tightly closed or fully open, and to observe all dictates of common courtesy and good hygiene.

g. Teach the client to approach all machinery, tools, equipment, doors, and all possible sources of danger with caution so as to minimize the possibility of the oversight of others resulting in injury to him.

INSTRUCTIONS IN PHYSICAL ORIENTATION AND FOOT TRAVEL

POINTS TO BE OBSERVED

Does the client do the following:

1. Observe basic rules of safety and adhere to safe practices at all times?
2. Maintain proper body posture?
3. Walk steadily?
4. Walk in a straight line and make turns without faltering?
5. Use points of reference effectively?
6. Travel alone with ease and confidence and without becoming confused?
7. Know the precise location of his objectives?

PHASE 11

PURPOSE: To teach the client inside travel techniques for use in traveling in unfamiliar territory indoors.

LESSON PLAN #3

1. Specific Objectives

- a. To teach the client the method of using his cane for traveling in unfamiliar territory indoors.
- b. To acquaint the client with the method which he may employ, under emergency conditions, in traveling without using his cane in unfamiliar territory indoors.

2. Procedure

- a. Instruct the client to grasp the shaft of his cane, at the point where the crook curves into the shaft, with his arm extended forward at about a 45 degree angle to his body, the inside of his wrist rotated downward, his forefinger extended along the side of his cane, with the crook of his cane turned outward and the shaft of the cane extending downward across his body, placing the tip of the cane about an inch or two above the floor in front of the foot opposite to the hand holding the cane. Instruct the client to grasp his cane firmly, with wrist relaxed but not dropped, and with arm straight, while he is in motion, and to use his cane as a bumper and not as a probe.
- b. Instruct the client to extend his arm forward, with the elbow bent so his forearm is across his body and parallel to the floor, at about the height of the top of his sternum, with his palm turned downward and his fingers extended in a relaxed, comfortable position. Point out to the client that, in this position, his arm will be far enough in front of his body so that it will be an effective bumper in the absence of a cane, and that his other arm should be kept relaxed at his side. Advise the client that, as he gains confidence in his ability to travel alone in unfamiliar territory, he may find it desirable to gradually lower his arm and, in time, find it practicable to carry his

arm in a more comfortable position, casually extended across his body, fingering his coat button, his watch chain or employing his hand in some similarly casual manner that will keep his arm in the protective position desired.

- c. Teach the client, whether traveling with or without his cane, to attend to sounds and other stimuli which may serve as indicators of significant points of reference and provide the client with adequate opportunity to practice, under supervision, localizing such sounds and the sources of other stimuli which may serve as indicators of significant of air from doors or windows, cooking odors, etc. — and interpreting them.

LESSON PLAN #4

1. Specific Objectives

- a. To acquaint the client with safe practices as they apply to his traveling in unfamiliar territory indoors.
- b. To caution the client against hazards in his traveling in unfamiliar territory indoors.

2. Procedure

- a. Emphasize to the client the danger of tripping passers-by that may result from extending the tip of his cane beyond the side of his body and the inadequate protection to himself that will result from his failure to extend his cane fully across the width of his body or close enough to the floor.

- b. Impress upon the client the importance of stopping instantly when his cane or his extended arm detects danger.

- c. Point out to the client that tenseness results in early fatigue and that he cannot remain fully alert if he is overly tired and that, therefore, he should strive to remain relaxed at all times, particularly when traveling alone, and, so far as possible, should avoid traveling alone when he feels nervous or overly tired.

- d. Caution the client against the lack of protection that may result from any attempt to use his cane as a probe and the danger of catching his hand or fingers that may result from his failure to use his arm as a bumper in the proper manner.

- e. Advise the client that the method for using his cane in traveling indoors is most convenient in close quarters where there is no likelihood of encountering descending steps or pitfalls but that the outdoor technique, in which he will be instructed subsequently, should be employed in traveling in any unfamiliar territory where descending steps or pitfalls are likely to be found.

INSTRUCTIONS IN PHYSICAL ORIENTATION AND FOOT TRAVEL

- f. Encourage the client to request assistance, if it is available, whenever he needs it.

POINTS TO BE OBSERVED

Does the client do the following:

1. Hold his arm straight from the shoulder to the wrist?
2. Grip his cane firmly, with his forefinger extending down along the side of the cane, and the crook turned outward so as to protect the knuckles of his cane hand?
3. Hold his cane far enough from his body?
4. Maintain proper body position, avoiding the tendency to lean forward when using his cane and to hide his head behind his arm when traveling without his cane?
5. Walk steadily without shuffling?
6. Localize and interpret sounds and other stimuli effectively?

PHASE III

PURPOSE: To teach the client the rhythm technique of using his cane for traveling in unfamiliar territory outdoors.

LESSON PLAN #5

1. Specific Objectives

- a. To teach the client the proper method of grasping his cane in using the rhythm technique.
- b. To help the client develop the proper rhythm and synchronization in the handling of his cane.

2. Procedure

- a. Instruct the client to grasp the shaft of his cane with the crook downward at the point where the crook curves into the shaft, between his thumb and forefinger, with his forefinger extending down along the side of the shaft and the third finger curving under the shaft so as to place the top of the shaft of his cane firmly against the heel of his hand, below the base of his thumb and forefinger, and to allow his fourth and fifth fingers to curve loosely around the top of the shaft and against the inside of the crook. Instruct the client to hold his arm so that his hand is in front of the center of his body slightly below his belt line and his elbow is pressed firmly against the front of his body slightly off center to the side nearer his cane hand. With his cane held in this manner, the tip touching the ground in front of the client, instruct the client to raise the cane slightly and move it from side to side with his wrist serving as the fulcrum and his arm remaining stationary. Advise the client that he may use whichever hand

he finds more comfortable to use; and that, as he acquires ability to properly control the cane, it will be proper for him to move his elbow farther from center, so long as his hand remains in the required position.

b. Instruct the client to move his cane from side to side, touching the tip to the ground lightly at the termination point of each sideward movement so as to describe an arc as wide as his body and about an inch or two from the ground at its highest point. Impress upon the client that his cane should not be permitted to move within his hand but that it should be held firmly but not tensely with the third finger, thumb, and forefinger and that the movement should originate at the wrist.

c. After the client has demonstrated his ability to move his cane in the required manner, instruct him to begin walking and to synchronize the movements of his cane so as to cause the tip of his cane to tap the ground in front of the foot opposite the one which is in a forward position—thus, as he brings his right foot forward, he will tap the ground in front of his left foot, and, as he brings his left foot forward, he will tap the ground in front of his right foot. Point out to the client that, in employing this synchronization, the tip of his cane will always touch the ground where the next step is to be made and will thus warn him of any danger.

d. Provide the client with adequate opportunity to practice, under supervision, the rhythm technique of using his cane.

e. Provide the client with adequate opportunity to practice shifting his cane from the position employed in the rhythm technique to that employed in the indoor method of using the cane, and back again, without changing the position of his fingers, to enable him to complete such shifting readily as occasion may require.

LESSON PLAN #6

1. Specific Objectives

- a. To acquaint the client with safe practices as they apply to his use of the rhythm technique in traveling in unfamiliar territory outdoors.
- b. To caution the client against hazards in his traveling in unfamiliar territory outdoors.
- c. To teach the client the proper use of the rhythm technique in following a building or fence line and in skirting large obstructions.
- d. To teach the client a safe method of contacting objects which he may wish to explore tactually.

INSTRUCTIONS IN PHYSICAL ORIENTATION AND FOOT TRAVEL

2. Procedure

a. Emphasize to the client the danger of tripping passers-by that may result from his use of an arc greater than the width of his body and the inadequate protection that will result from his use of an arc smaller than the width of his body or higher than the approximate inch or two from the ground that has been found to be most satisfactory.

b. Impress upon the client the importance of stopping instantly when the tip of his cane detects danger.

c. Point out to the client that building lines, fence lines, and the edges of large obstructions which contain no great number of breaks or irregularities may serve as convenient guide lines. Instruct the client to follow such lines by walking sufficiently close to them to enable him to slightly extend the width of the arc in his use of the rhythm technique, to touch the building, fence, or object which he is skirting at its juncture with the sidewalk with the tip of his cane each time he completes the arc on the side of the line he is following. Afford him adequate opportunity to practice following such a guide line in this manner.

d. Point out to the client the danger of injury or embarrassment that may result from the extending of his hand through mid-air to touch an object which he may wish to explore tactually; and instruct him that such danger can be avoided if, when his cane comes in contact with such an object, he will hold the tip of his cane firmly in its position and walk forward until the shaft of the cane comes in contact with the object so that he can run his hand down the shaft and find the object at a convenient point from which to begin his exploration of it. Point out to the client that this method of establishing direct contact with objects will prove effective in finding change booths, doorknobs, etc.; and provide adequate opportunity for the client to practice the method under supervision.

e. Encourage the client to request assistance, if it is available, whenever he needs it.

f. Point out to the client that the use of the full length of his cane might constitute a tripping hazard in extremely congested areas; and provide opportunity for him to practice using the rhythm technique with his hand moved part way down the shaft of the cane so as to provide a shorter extension of the cane for use in very close quarters.

g. Call the client's attention to the fact that the rhythm technique does not provide protection against suspended obstructions, such as awnings, scaffolds, etc. and recommend that his free arm be used as a bumper whenever he finds himself in an area

in which such obstructions might exist and in which assistance is not available.

POINTS TO BE OBSERVED

Does the client do the following:

1. Maintain a movement of his cane properly synchronized with his steps?
2. Maintain an arc the width of his body close enough to the ground to detect pipes and similar tripping hazards?
3. Tap his cane so hard as to indicate that it is being gripped too firmly and reflect a tenseness which may produce undue fatigue?
4. Tap his cane firmly enough to provide vibration in the shaft of the cane which will help to indicate the type of walk being traversed — dirt, concrete, slate, etc.?
5. Hold his forefinger straight along the side of the shaft of the cane so as to make the shaft of the cane, in effect, an extension of his forefinger?
6. Hold the cane securely in his hand and restrict all movement of the cane to his wrist?
7. Extend his arm straight forward, with his elbow properly placed against his body and with his hand located in front of the center of his body and slightly below his belt line?
8. Avoid needless maneuvers with the cane and use it only to detect danger and not to explore it?
9. Show sufficient interest to practice the correct use of the rhythm technique enough to enable him to perform it automatically, without undue concentration?
10. Use the cane properly in following a guide line?
11. Use the cane properly in establishing contact with an object he wishes to explore tactually?

NOTE

Although slight variations in the use of the rhythm technique may properly be made to achieve the most comfortable use of the technique for individual clients as they become thoroughly adept in its use, at this stage of training it is important that no deviations from the technique be encouraged by the instructor. The client may be presumed to have arrived at a stage of proficiency and self-confidence which may cause him to become careless and to resort to deviations in the use of the technique which may serve neither his safety nor his comfortable use of the technique and which may constitute the beginning of bad habits that, if neglected, may later be difficult to correct. It will be found helpful, at this stage of training, for the instructor to carefully rate

INSTRUCTIONS IN PHYSICAL ORIENTATION AND FOOT TRAVEL

the client's proficiency, using the rating sheet provided on page 22, and to discuss with the client the ratings he has given him and the basis for these ratings in order that the client may be aware of the weaknesses in his use of the technique that will require his special attention during the subsequent period of instruction and practice.

PHASE IV

PURPOSE: To teach the client the proper use of the cane to maintain the desired direction of movement in crossing streets.

LESSON PLAN #7

1. Specific Objectives

- a. To teach the client the proper method of verifying the direction in which he is facing when he arrives at a corner in order to enable him to walk the shortest line to the opposite curb in the event he should be obliged to cross a street by himself.
- b. To teach the client the method of using the cane in crossing streets alone under emergency conditions which will enable him to detect stationary obstructions and, at the same time, permit him to make the crossing with a minimum of delay.

2. Procedure

a. Instruct the client that, as the tip of his cane detects a down curb, he should hold the tip of the cane firmly on the curb and move forward in such a manner as to place both of his feet on the curb with his toes protruding slightly over the edge. Instruct the client that, from this position, without turning his body, he should transfer his cane to his other hand and run the tip of it along the curb as far as he can comfortably reach, return it to him along the curb, transfer the cane back to his cane hand, and repeat the process with that hand. Point out to the client that, if the cane moves on a line with his shoulders on both sides, it will indicate that he is facing directly across the street.

b. Point out to the client that, if, when moving the tip of the cane along the curb in the manner instructed, he finds that the cane moves behind his shoulder line on either side, it will indicate that he is standing at a curved curb and, in squaring his toes against such a curb, he may be positioning himself to walk into the street which he has been following instead of directly over the cross-street.

c. Advise the client that, if he finds himself positioned at a curved curb, he should move a few steps away from the curved part of the curb employing the rhythm technique to protect himself against hydrants and other obstructions, and repeat the process

of verifying the direction in which he is facing at the curb.

d. Provide adequate opportunity for the client to practice the process of verifying the direction in which he is facing on both squared and curved curbs.

e. Instruct the client that, after he has positioned himself properly for crossing the street, he should extend his cane forward, moving the tip along the street, to determine whether he may step down from the curb without encountering a parked vehicle or other obstruction. Advise the client not to repeat this process more than once before resuming his forward movement, as repeated extension of the cane in this manner will serve no useful purpose and may develop a habit of employing the cane as a probe instead of as a bumper.

f. Impress upon the client the importance of listening carefully, to make certain, so far as possible, that the street which he is about to cross is free of moving traffic before he steps down from the curb; and instruct the client to use the cane, when crossing the street, in the same manner in which he has been instructed to use it for traveling in unfamiliar territory indoors. Suggest that, while crossing the street, he might find it helpful to touch the tip of his cane to the pavement once or twice in order to make certain that he is holding it at the proper height and that, as he should walk steadily and more rapidly than he would ordinarily walk indoors, he might find it advisable to hold his cane a few inches farther in front of him than he customarily would in traveling indoors. Advise him that, as the tip of his cane comes in contact with the opposite curb, just above its juncture with the street, he should measure the height of the curb by raising his cane over the top of the curb before stepping up onto the sidewalk.

g. Instruct the client to hold his cane in the position used in crossing the street until after he steps up on the opposite curb and to extend his cane forward and outward in changing it to the position used in the rhythm technique in order that he may detect any rubbish receptacle, pole, or other obstruction before resuming walking along the sidewalk.

LESSON PLAN #8

1. Specific Objectives

- a. To impress upon the client the limitations of the method, in which he has been instructed, for crossing streets alone under emergency conditions.
- b. To acquaint the client with auditory and other aids to his safety in crossing streets.
- c. To familiarize the client with convenient and

INSTRUCTIONS IN PHYSICAL ORIENTATION AND FOOT TRAVEL

safe ways of enlisting the aid of sighted persons in crossing streets.

2. Procedure

a. Emphasize to the client that, without responsible sighted assistance, he has no way of providing any adequate protection for himself against the hazards of vehicular traffic in crossing streets; and that, consequently, he should spare no effort to obtain the assistance he requires for crossing streets and should cross alone only if absolutely necessary.

b. Point out to the client that he may be able to determine whether the traffic light is in his favor by correctly interpreting the sounds of the moving traffic; and emphasize the importance of allowing sufficient time for vehicles to turn the corner after the light has changed in his favor.

c. Direct the client's attention, at an appropriate corner, to the click and other mechanical sounds incident to the change of the traffic light which the client may use to support his inference as to the change of direction in movement of traffic.

d. Advise the client that traffic control buttons are provided at some intersections which the pedestrian may use to halt traffic and urge the client to familiarize himself with the use of these wherever they may exist.

e. Point out to the client that, in one-way street areas, he may be able to plan his route of travel in such a way as to have the traffic at every street which he wishes to cross move from the direction of the building line along which he may be walking so that he can be certain that, when he hears the traffic stop in front of him, there will be no danger of any traffic turning into the street which he is to cross.

f. Suggest to the client that he familiarize himself as thoroughly as possible with the layouts of subway and elevated stations in order that he might plan his exit from these stations in such a way as to eliminate needless crossing of streets; and point out that, in many instances, he will find it possible to cross streets by entering a subway or elevated station on one side of the street and coming out at the other without having to enter the station proper.

g. Suggest to the client that, in requesting assistance in crossing a street, he might find it desirable to engage the attention of a particular person or small group of persons rather than to tap his cane on the curb or resort to some similar means of broadcasting his need for assistance that might prove embarrassing and create confusion which frequently detracts from the value of the assistance offered. Point out to the client that, if he can engage the attention

of those whom he wishes to assist him, he will have some opportunity to appraise the responsibility of such persons and to establish a degree of rapport between himself and them which will afford a basis for making clear the kind of assistance required and will avoid needless embarrassment. Suggest to the client that, lightly brushing against the person whose attention he wishes to engage, touching him with his cane, or creating some similarly harmless occasion for asking his pardon often provides a convenient means of evoking a response on the basis of which the client may profitably decide whether to request the help required or whether to direct the request to another person.

h. Advise the client to ask to take the arm of any person offering to guide him rather than to allow himself to be pushed across streets or through similarly dangerous areas.

i. While observing at a distance, allow ample opportunity for the client to request assistance from the public in crossing the streets in order to enable him to become accustomed to doing so and to afford a basis upon which his technique of engaging the attention of strangers might be reviewed with him and recommendations for improving it be made.

POINTS TO BE OBSERVED

Does the client do the following:

1. Allow his toes to protrude slightly over the edge of the curb when verifying the direction in which he is facing?

2. Face straight forward as he moves the tip of his cane along the curb to verify the direction in which he is facing?

3. Use the rhythm technique when he finds it necessary to walk along the curb?

4. Extend his cane forward only once to determine whether his path is free of obstructions before stepping down from the curb?

ACKNOWLEDGEMENT

The use of the cane in the manner set forth in these lesson plans as an aid to the blind in foot travel has been adapted from the techniques which were developed by Mr. Richard E. Hoover during his work with blinded servicemen at the Valley Forge General Hospital. The Industrial Home for the Blind wishes to express its gratitude to Mr. Hoover for his estimable aid in training its instructors in the use of the cane and in guiding, through his advice and encouragement, the early development of its program of physical orientation and foot travel.

(To be concluded in next issue)

BOOK REVIEWS

The 1949 Year Book of Physical Medicine and Rehabilitation, edited by Dr. Krusen, Dr. Rusk, Dr. Deaver, Dr. Overholser and Dr. Elkins. The Year Book Publishing Company, Chicago, Illinois. 456 pages and 132 illustrations, price \$5.00.

The book is a collection of articles from current literature of 1949 (Dec. 1948 to Nov. 1949), selected and screened by the editors to present a comprehensive backdrop on the recent developments in this now a fully recognized field. The three parts of the book are: Physical Medicine, Occupational Therapy and Rehabilitation. The section on rehabilitation includes articles on problems in the care of paraplegia, cerebral palsy, amputation, tuberculosis, speech defects and exercises in neuropsychiatry. Other articles under Physical Medicine and Rehabilitation views trends in the fields of geriatrics, neurology, psychiatry and rheumatology. The book has a tremendous wealth of information—new anatomic and physiologic concepts; new prostheses and other improved devices; latest on functional testing and training; new treatments for a variety of conditions, such as chest pain, psychiatric disorders, orthopedic conditions, skin diseases and rheumatic conditions; facts on understanding and combating fatigue; a complete report on ultrasonics; and a timely coverage of poliomyelitis. The book is of interest to Corrective Therapists as it offers current literature relating to Physical Medicine and Rehabilitation.

Self Help Devices for Rehabilitation, New York University—Bellevue Medical Center, Institute of Physical Medicine and Rehabilitation, 325 East 38th St., N. Y. City, 16, N. Y.

This timely manual has been developed by the Institute under a grant from the National Foundation for Infantile Paralysis.

It reports devices, prices, retailers and shows the gadget in use. Emphasis seems to be on the selection of devices that are simple, easy to make and well suited to the severely disabled.

It is an excellent report, making it a valuable addition to any individual's library, as well as to Public and Medical Libraries. This Manual and those to follow will be a needed addition to the literature of Rehabilitation.

MEET YOUR EDITOR



SAM BORUCHOV

Our Editor is a charter member of the Association. He belonged to the original group of 30 men who attended the first Corrective Therapy School at Winter Veterans Hospital, Topeka, Kansas.

Mr. Boruchov has his B.S. and M.A. Degree from New York University and at present is completing his Doctorate Degree in Rehabilitation there. He came to the Veterans Administration from the New York City school system where he taught Physical Education, Recreation, and Corrective Physical Education.

During the latter part of the war, he was at the Walter Reed General Hospital, in the Physical Reconditioning Program.

Mr. Boruchov has always been very active in the Association and was its third president, 1949-1950. We all appreciate his worthy efforts in behalf of our association and we know with his drive and with the assistance of our members, our association will continue to grow.

Corrective Physical Education by Josephine Rathbone, 4th edition, price \$3.75, pp. 300 with 37 illustrations, W. B. Saunders and Co., Philadelphia.

An all embracing book covering the gamut of physical defects and what the physical educator can do to correct the various conditions. The book offers a review of the anatomy and mechanics of joint movements, a review of physiology of the neuromuscular systems, a chapter on the exercise program. Under the last mentioned chapter are exercises to relieve tensions, to increase chest flexibility, to improve muscle strength, the Yogi system and the Klapp method of creeping. The book may offer to the Corrective Therapist another practical guide.

Items That May Assist Polio Patients to Become More Independent

Compiled by The Graduate School of Physical Therapy
Georgia Warm Springs Foundation

"REMOTION," \$1.50 — HOLOCENE PRODUCTS CO., 1681 Union St. Brooklyn 13, N. Y.

10" extension cord with on and off switch at one end and special receptor plug at other end; used for patients to turn radios, lights, fans, etc. off without calling someone.

TELE-REST \$1.95 — H. H. RENNEKER, 441 C. St. San Diego 1, Calif.

Curved narrow shoulder piece to hold telephone on shoulder.

MORRIS PHONE REST, \$2.50 — BERT M. MORRIS CO., Los Angeles, Calif.

Broad shoulder piece to hold telephone on shoulder.

HARD RUBBER PHONE HOLDER — SEARS ROEBUCK CO., Atlanta, Ga.

PHONE HOLDER, \$1.50 (approx.) — UNITED VETERANS' INDUSTRIES, 2221 S. Hoover, Los Angeles 1, Calif., or EDWARD B. WINDSOR CO., 922 N. 4th St., Milwaukee 3, Wis.

Suggested by "Outwitting Handicaps."

LAZY TONGS — DANCO INSTRUMENTS, P. O. Box 387, Huntington, N. Y.

LONG WOODEN SCISSOR REACHERS, \$2.95 — ROBERT W. KELLOGG CO., Springfield 2, Mass.

For dressing activities and reaching.

PAULO-PICK UP STICK — HOUSEWARE DEPT. Famous Barr, St. Louis, Mo.

Manufactured by Paulo Products Co., St. Louis, Mo. "AUTOTAPER," 98c — COLTON MANUFACTURING CORP., 82 W. Washington St., Chicago 2, Ill.

Scotch tape holder with knife surface for cutting tape for one-handed individuals.

FEMALE URINALS, \$3.00 (approx.) — AMERICAN SURGICAL SUPPLY HOUSE, Atlanta, Ga., (Or any hospital supply house).

ELASTIC STOCKINGS — 2500 S. Dearborn St., Chicago, Ill.

TRAY ADAPTABLE FOR USE IN CAR, \$3.45 — SEARS ROEBUCK CO., Atlanta, Ga.

Folding legs; adjustable tilt top; 12" by 20".

DRIVE-EASE ARM REST, \$2.98 — CLINTON MOTIVE SALES CO., 545 W. Roosevelt Rd. Chicago 7, Ill.

Hand crutch and arm rest for moving about in car; lifting weight on air cushion seat.

FLEX-O-LACE, 50c a pair — CECIL CORP., 307 N. Michigan Ave., Chicago 1, Ill.

Single strand of 100% stretch nylon elastic; black, brown, white.

SAFETY BATH RAIL, \$4.95 — STITCHCRAFT PRODUCTS OF OHIO, 830 Gas and Electric Bldg., Dayton 2, Ohio.

Fits anywhere crosswise, standard tub; will support 300 lbs.

MISMATED SHOES, From \$8.95-\$14.95 men; \$6.95-\$14.95 women. Single shoes half price. — BENEFIT SHOE FOUNDATION INC., P. O. Box 98, Bristol, R. I.

Regular standard make shoes; no orthopedic or special shoes.

SHOWER BOAT, \$10.00 — AL KAPLAN, Ardmore, Pa.

To keep brace or artificial limb dry in shower; 3 sizes: 30", 34", and 37".

"TIP", 29c — BURGESS FASTENING CO. 1220 W. 9th St., Cleveland 13, Ohio.

Plastic band slips over finger and covers all but nail to be polished. For individuals with tremor. CARD HOLDERS, "The Little Jeff" wooden card holders. — A. G. SPALDING & BROS. SPORTING GOODS. (Information from any Spalding Dealer.)

ELECTRIC SCISSORS — Trim Electric Scissors by: ATLAS INSTRUMENT CO., Haddonfield, N. J.

SMOKER'S ROBOT — JONATHAN LAW, 157 State St., New Haven 10, Conn.

Smoking by remote control; cigarette in ash tray, tube to mouth; no danger of fire, do not have to hold cigarette.

PADDED VESTS FOR SCOLIOSIS PATIENT — "OUTWITTING HANDICAPS" 43rd issue 15327 San Juan Drive, Detroit 21, Mich.

To make clothes look better.

SNAP ON PAD — Same address as above.
To compensate for atrophy of shoulders.

JUMBO PLAYING CARDS, 65c — AM. FOUNDATION FOR THE BLIND, INC., 15 W. 16th St., New York 11, N.Y.
SPECIAL BALL POINT PENS — Same address as above.

Writer's fingers may follow immediately after point without smudging.

ELECTRIC DOOR OPENER, \$2.98 — WE, THE HANDICAPPED INC., 15327 San Juan Drive, Detroit 21, Mich.

Handy accessory to door to bedside communication system.

AUTOMATIC PAGE TURNER, \$60.00 — MANUFACTURE: Carbondale, Pa. RETAILER: GENERAL TEXTILE MILLS INC., 450 7th Ave., New York, N. Y. 313 1st St., Ann Arbor, Mich.

CEILING PROJECTOR — PROJECTED BOOKS INC., Distributed by civic organizations and charitable institutions.

ELECTRIC TYPEWRITER — I.B.M. Distributor in your district.

Used models may be purchased reasonably.

ITEMS THAT MAY ASSIST POLIO PATIENTS TO BECOME MORE INDEPENDENT

ONE-HAND TYPEWRITERS — TYPEWRITING INST. FOR THE HANDICAPPED, 208 West 23rd. St., New York York 11, N. Y.

Left or right hand typewriters; instruction courses; thumb control shift bar eliminates locking and unlocking shift key.

INTERCOM, \$20.00-\$75.00 — MAIL ORDER HOUSE, COMMUNICATION SYSTEM, DEALERS IN LARGE TOWNS.

Intercommunication set; master stations plus 6 push buttons usually adequate; substation can communicate only with master station but master station can communicate with all substations.

ADAPTING HOME RADIO FOR DOUBLE DUTY AS RADIO RECEIVER AND INTERCOMMUNICATOR — WE, THE HANDICAPPED INC., 15327 San Juan Drive, Detroit 21, Mich.

TELOAID, \$61.50 — WAGNER METCALF CORP., 220 W. Broadway, Glendale 4, Calif.

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Designed to prevent slipping.

RICHARDS' NON-SKID ICE GRIPPER — THE MAINE METAL & PLASTIC RESEARCH CO., Portland 3, Maine.

"GRIPSHUR," \$4.50 — PECK INDUSTRIES INC., Box 3923, Cleveland 20, Ohio.

Crutch attachment for ice and snow.

BELT CLAMP TO HOLD FISHING TACKLE — For blue prints: MR. LONN D. ALLEN, Box 42 Pontiac, Mich.

So one arm patients can bait their own hooks. Simple to make.

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Hand lever; allows both hands to be free; simply operated by switches.

COUNTER BALANCE GADGET — for Information: CAPT. RAY HOUSE (Polio patient), Mansfield, Ill.

For getting in and out of bath tub when you can use only 1 lb. of pressure with hands.

PORTO-LIFT, \$216.00-\$244.00 — PORTO-LIFT MANUFACTURING CO., 1412 N. Larch St., Lansing 5, Mich. Hydraulic lift on wheels.

SHOWER BATH CABINETS — W. F. NORMAN SHEET METAL MFG. CO., Nevada, Missouri. (Write to Mfg. for dealer in your vicinity).

PLANS FOR HOME FOR WHEELCHAIR LIVING — NEW YORK CHAPTER AMERICAN RED CROSS, 315 Lexington Ave., New York 16, New York.

Free

ADULT TRICYCLE — WILFORD F. WRIGHT, Veterans Home, Bay Pines, Fla.

BICYCLE ATTACHMENT, \$22.50 — Information in: "OUTWITTING HANDICAPS" 47th issue.

So handicapped can safely use bicycle. Landing gear, extra set of retractable wheels that permit riding on 2 wheels, stopping and starting on 4.

SNIDER HAND CLUTCH CONTROL, \$18.75 — CALHOUN MFG. CO., Cedar Falls, Iowa.
(For Farmall and Allis Chalmers Tractors only)

To enable patients with leg involvement to operate tractor.

HAND CONTROLS FOR AUTOMATIC TRANSMISSIONS, \$65.00 — ROBERT G. STEWARD, 18201 Van Owen St., Reseda, Calif.

HANDE-FEED, \$9.95 — TRANS-CONTINENTAL INDUSTRIES INC., 818 Olive St., Louis, Mo.

Hand gas feed (automatic in shutting off) either left or right hand.

HAND CONTROLS FOR CARS — Blue prints available at: BRACE SHOP, GA. WARM SPRINGS FOUNDATION, Warm Springs, Ga.

Can be made and installed by any mechanic.

"NORTHWEST MAPINE FOOT CONTROL" \$7.50 — NORTHWESTERN MARINE CO., 655 Selby Ave. St. Paul 4, Minn.

Steering boat with feet (for 1 arm fisherman); made of rust resistant cadmium plated steel.

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Two indiv. side-by-side units which temporarily or permanently replace the original front seat in car; adjustable from regular seat to flat bed; can move forward toward front of car or backward to allow room to get a severely involved patient out of car.

COMPACT BATTERY POWERED CHAIR, \$300—KENNETH GINSBERG, Osage, Iowa, or MITCHELL MOTOR CHAIR CO., Osage, Iowa.

42" by 24"; all controls regulated by one hand; removable back; can be carried in back of some late model cars; radio, head and tail lights extra.

MOTORIZED WHEELCHAIR — KENNETH KEYES, 3625 S. W. 1st Ave., Miami, Fla.

By batteries with controls designed for severely involved upper extremities.

The Editors are grateful to DR. ROBERT L. BENNETT, Director of Physical Medicine, Warm Springs, Georgia, for permission to publish this helpful list.

The Journal for Physical and Mental Rehabilitation

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Send all plates and copy instructions to Editor

THE JOURNAL FOR PHYSICAL AND MENTAL REHABILITATION

News and Comments

California Chapter

The second Program Meeting of the Chapter had Dr. Thomas Barnett, M.D., Chief, Professional Services, Wadsworth General Hospital speak on the topic "Some New Problems Considered in Rehabilitation." Also on the program Dr. John Aldes, Director of Physical Medicine and Rehabilitation at Cedars of Lebanon Hospital brought out "Recent Trends in Amputee Rehabilitation." The third Program Meeting held July 17, 1950 had Dr. Joseph Pessin relate the "The Importance of Psychiatric Orientation in Rehabilitation" and Dr. S. A. Weissman, Assistant Professor of Medicine, University of Southern California, talk on "Chest Development in Relation to Heart and Lung Diseases."

The officers of the Chapter are:

President Harry W. Hart, Venice, Cal.
Vice-President David Anderson, Van Nuys, Cal.
Secretary Harold Brenner, North Hollywood, Cal.
Treasurer Clint B. Rankin, Los Angeles, Cal.

Convention of Rehabilitation Therapists

The National Association of Rehabilitation Therapists will hold a convention at Topeka, Kansas, September 14, 15, 16, 1950 (Thursday, Friday and Saturday). The program which will include distinguished speakers, tours, dinners and entertainment, is being prepared and will be announced later. All rehabilitation therapists, whatever their specialties, are cordially invited to attend this, the first nationwide assembly of the National Association of Rehabilitation Therapists.

Appointments

Mr. John Bunker was named as Chairman of the 1951 National Convention of the Association of Physical and Mental Rehabilitation which will be held in Los Angeles, California. The preliminary spade work has already been started and it is pointing to a well rounded scientific and clinical session. Particulars will be released as they develop.

Mr. Phillip A. West has resigned his position at Long Beach Veterans Hospital in order to assume his new duties as Corrective Therapist at the Cedar of Lebanon Hospital, Los Angeles, California. Dr. John Aldes one of the most prominent men in the field of Physical Medicine on the West Coast directs the program.

Extended Active Duty

This column will be pleased to print information regarding the re-call or entrance to active duty in the Military Services, of any of the members of the Association of Physical and Mental Rehabilitation.

Forward news, points of information and comments regarding the field of rehabilitation; appointments of members of the APMR to important new positions (including military service); vacancies; reviews of recent book publications and abstracts of articles in recent publications to Mr. John Halbin, 83 Pulaski Blvd., Huntington Station, L. I., New York.

GI's

Veterans Administration stated there are 19,014,000 American war veterans living, 14,000,000 of them World War II. The following are figures on surviving veterans:

Grand Army of the Republic	15
Indian Wars	580
Spanish-American War	119,000
World War I	4,894,405
World War II	14,000,000

Total mortal battle casualties for all American wars were 935,000 of the 25,030,000 who took part in them all, including the Revolution. There are 2,308,700 disabled veterans.

The Kessler Institute for Rehabilitation, West Orange, New Jersey announced the appointment of Carl A. Maxwell, M.D., of Morristown, N.J., as Associate Medical Director of the institute. Dr. Maxwell is a Diplomat of the American Board of Orthopedic Surgeons. From 1948 to 1950 he was chief orthopedic surgeon at Crile Veterans Administration Hospital in Cleveland, Ohio. From 1946 to 1948 he was resident orthopedic surgeon at New Orleans Veterans Administration Hospital, during which time he held a fellowship at Children's Orthopedic, Tulane University. Dr. Maxwell served as a medical officer in the U. S. Army from 1942 to 1946, during which time he was chief orthopedic surgeon at the Station Hospital, Camp Kilmer, and served overseas as well. He received his medical training at the College of Medical Evangelists, and interned at Wheeling, West Virginia.

PAY YOUR 1950 DUES NOW

Next issue of the Journal will be sent only to those members who have paid their 1949 dues.

SEND TO:

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736 So. Graham Street
Memphis, Tenn.

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ASSOCIATION FOR PHYSICAL AND MENTAL REHABILITATION

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LOCATION

FORMAL EDUCATION (College) (Degree) (Major Subjects)
(REQUIRED—A MAJOR IN PHYSICAL EDUCATION)

TRAINING IN PHYSICAL REHAB.

EXPERIENCE IN PHYSICAL AND/OR MENTAL REHABILITATION
(Required—One Year Under Direct Supervision of a Doctor of Medicine)

CONTRIBUTION
i.e. Publications, Studies, Surveys or Research in the field of Physical or Mental Rehabilitation

REFERENCES: 1. Name Position Location

2.

Signature of Applicant

NOTE: REQUIREMENTS LISTED ABOVE ARE FOR ACTIVE MEMBERSHIPS
APPLICATION FOR ASSOCIATE MEMBERSHIP
ASSOCIATION FOR PHYSICAL AND MENTAL REHABILITATION

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